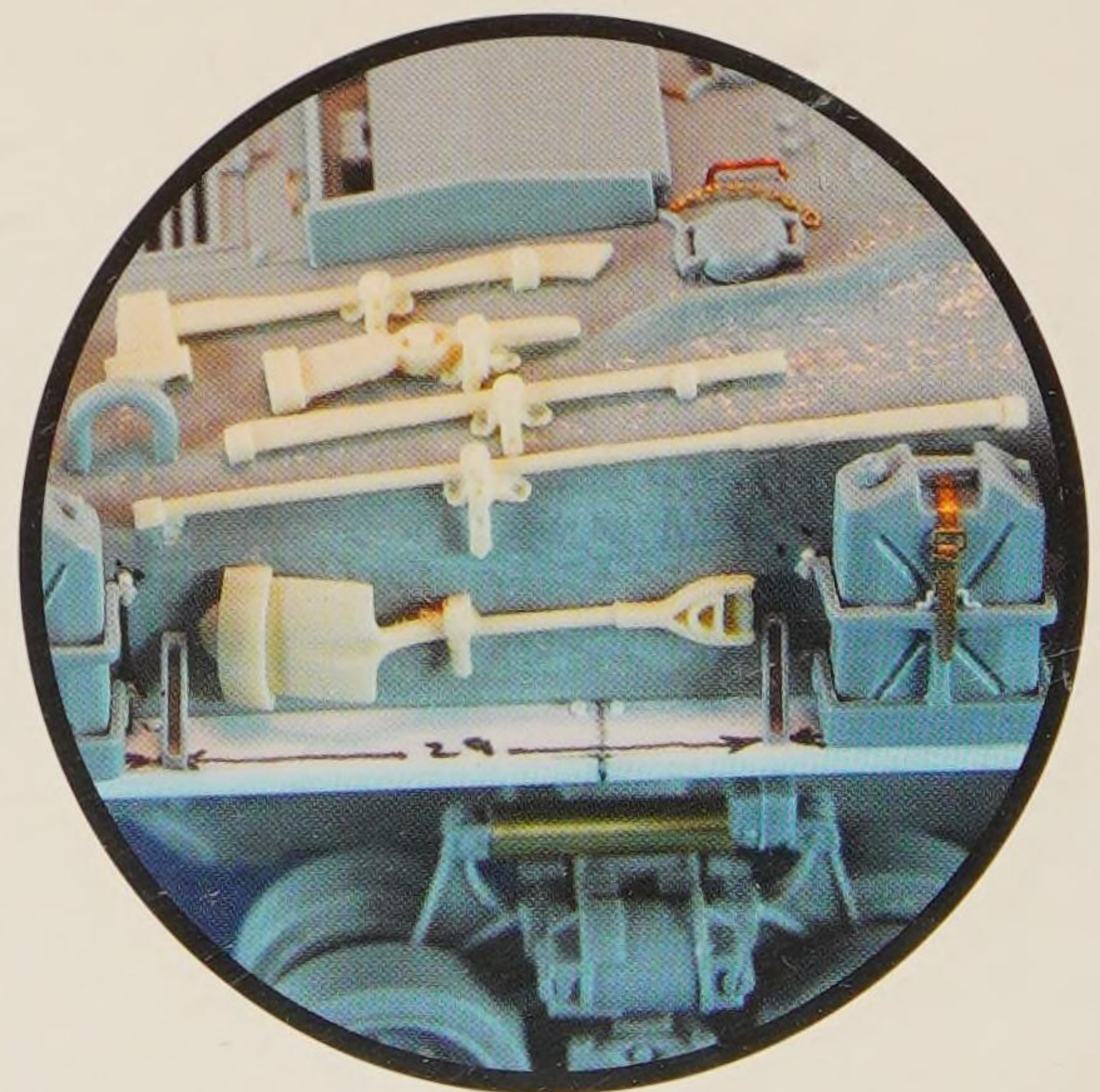
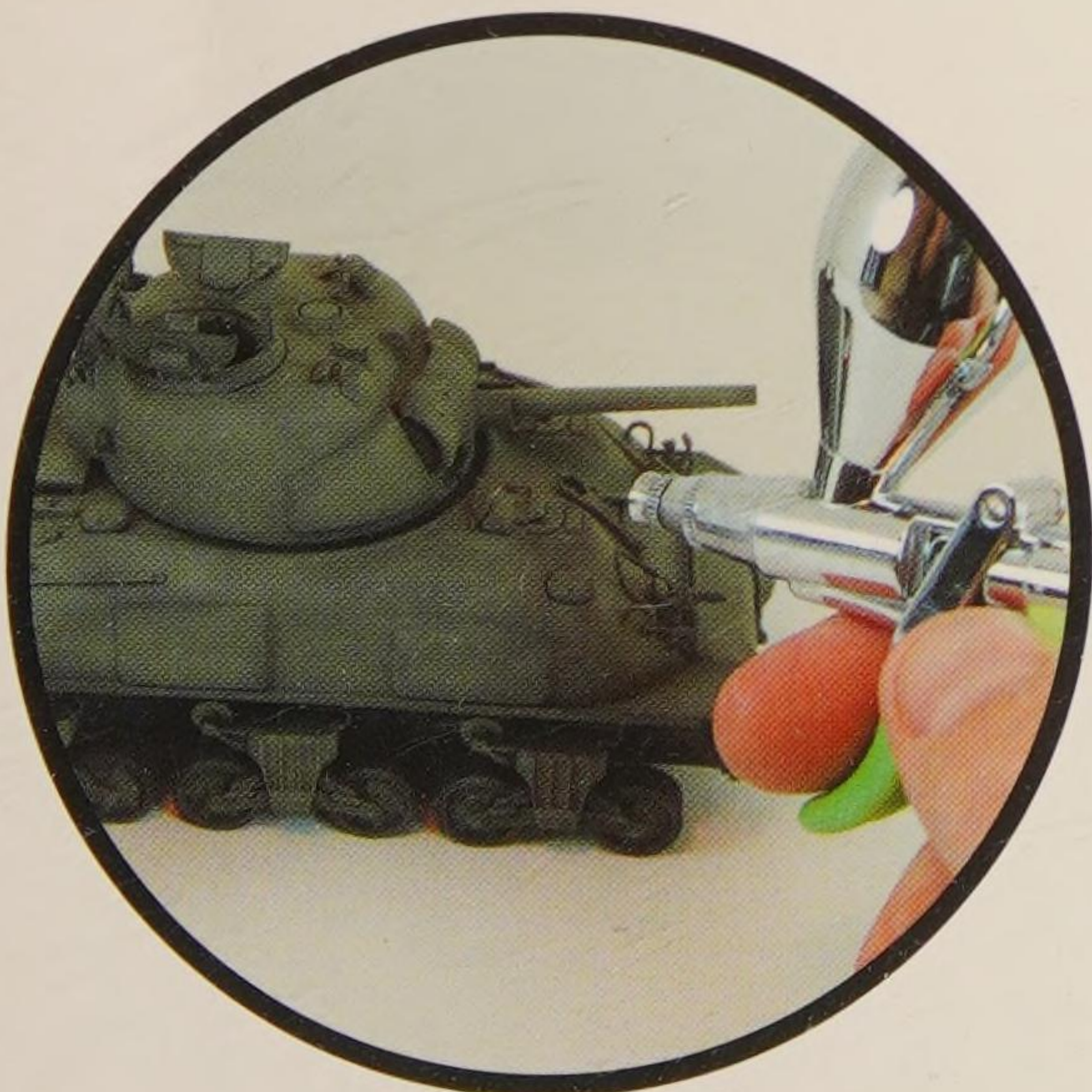


Building and Detailing Realistic SHERMAN TANKS

JAMES K. WECHSLER

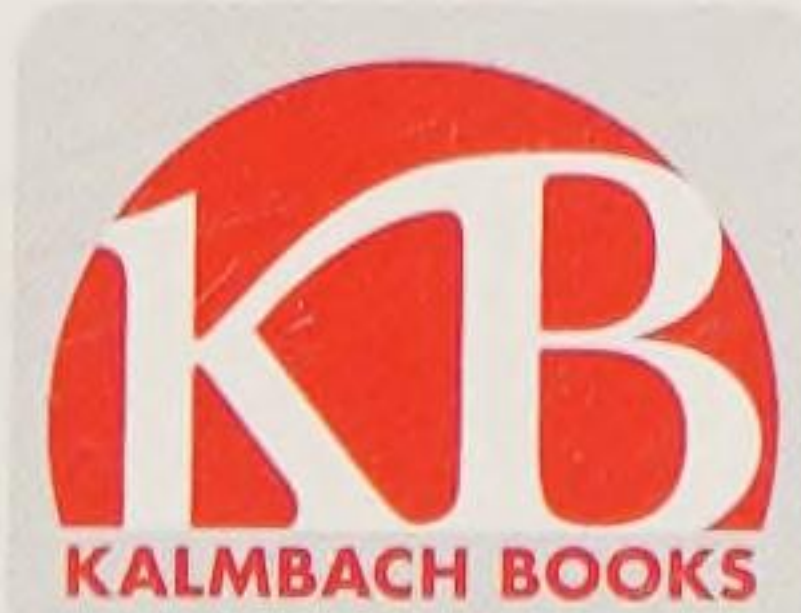




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Building and Detailing Realistic **SHERMAN TANKS**

JAMES K. WECHSLER



Kalmbach Books

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Introduction

Without a doubt, the history of the Sherman tank is written in the sheer quantity of its production in such a short time in response to an imminent world crisis. Only the Soviet T-34 can claim production rates of a similar level.

But was the M4 Sherman a great tank? Even with the perspective provided by the Sherman's more than a half-century of active duty in the service of many countries, that remains a great debate among armor enthusiasts.

Some 49,234 Sherman tanks and variants were produced. Its first use in combat was in 1942 by the British at the Battle of El Alamein in Egypt. Its last operational use, although unconfirmed, is thought to have been in Chile in 2002, which would give it an active service life of 60 years. It was deployed by 46 countries and served on every continent except Antarctica! These numbers alone guarantee it a special place in history.

Built from a blank sheet. But to truly understand the Sherman, one must also understand why it was developed and why certain design choices were made. It is easy to forget that when development of the Sherman began around 1940, the United States had little experience with armored warfare. In fact, not too many years earlier, many in the U.S. military leadership did not even believe in armored warfare. Even George Patton himself rejoined the Cavalry after World War I.

Oddly, the western allies (U.S., Britain, France) for the most part lost interest in armored warfare and tanks after WWI. France maintained a large tank force but spent little effort developing battle tactics to employ them properly. So it was a tremendous shock when the German armored forces sliced through French and British troops.

Seemingly overnight, the Blitzkrieg established that tanks were a fundamental part of modern ground warfare. But what capabilities should a new American tank have? It's hard to comprehend in this day of the Internet, Youtube, and 24-hour television that in 1940, it was hard to get timely combat reports and photographs on which to base planning for modern tank warfare. With the United States being thousands of miles and an ocean away

from the battles, getting good information about what was needed was a major obstacle.

So the U.S. military had to use what information it had to formulate a battle plan for armored warfare, and this would have a profound effect on the design of the Sherman tank, both good and bad.

One of the most significant aspects of U.S. armored warfare doctrine was that tanks would be primarily employed to support the infantry, and tank destroyers would handle enemy tanks. So the Sherman was primarily designed for infantry support with a secondary role of engaging enemy tanks. The United States intended to use the M10 and M18 tank destroyers to combat enemy tanks.

The upside of this decision was that the Sherman was equipped with a 75mm gun so that it could fire an effective high explosive round to support the infantry. But the downside was that the Sherman had been fitted with a short barrel because of concerns that a long barrel would make it harder to maneuver the tank in close quarters.

The realities of combat would quickly show that the idea of using tank destroyers for fighting enemy tanks had a major flaw. Namely, Allied troops didn't get to choose when they would encounter enemy tanks. When they did, if sufficient tank destroyers weren't available, Shermans had to fight tank-on-tank battles with ever-evolving German armor.

Anywhere, everywhere. Another key aspect of the Sherman design was that planners knew U.S. tanks would have to be transported all over the world to reach the battlefield. Elements like the lifting capability of dock cranes, width of railroad cars, and most importantly the weight limits of bridges were factored into the design of the tank. Although none of these factors was very important to a tank crew in the middle of a battle, they all were very important to the commanding generals who needed to get a lot of tanks to the fight. In fact, the Sherman's incredible ability to operate without a lot of specialized support equipment was a prime factor in the ability of the United States and Britain to exploit the Normandy breakthrough and chase the German army across France.



Bookends—the T6 prototype in 1941 and the Chilean M60 HMVS in 2002.

By comparison, the feared German Tiger tank needed a second set of special tracks just to be loaded on most rail cars. It was badly underpowered, so its engine didn't withstand the demands of high-speed running. Also, it was extremely heavy, so many of the bridges in western Europe couldn't support its weight, greatly reducing the options for bringing these tanks to and from a battle.

Head-to-head. So how did the Sherman actually stack up in the more traditional measure of a tank, namely armor, armament, and mobility? At the time of its development, the Sherman's counterparts were the German Panzer IV and the Soviet T-34. The Sherman compared reasonably well to both. The Sherman and Panzer IV had 75mm guns, and the T-34 had a 76mm gun. Initially, none had particularly long barrels, though the Panzer IV would later get one. But all three guns, coupled with the ammunition they could fire, were similar.

So too was the overall armor level. The T-34 made the best use of sloped armor; the Sherman's armor sloped effectively on the front but not on the sides. The Panzer IV was mostly slab sided. The general armor thickness levels were similar too, and all three tanks had weak spots.

In terms of mobility, the Sherman was a little worse in soft terrain because it used narrower tracks that resulted in higher ground pressure that caused it to bog down more easily than the other two. But in most other mobility factors, the Sherman was at least as good as the other tanks.

So when the Sherman first saw action in 1942, it was an effective tank. Of course it would be no match in one-on-one combat with the much heavier German Tiger and Panther tanks that came along later. Then again, it wasn't designed to fight them, and rarely did the Germans face just one Sherman.

But the story of the Sherman isn't complete without considering many of the

other aspects that would have a big impact on the Sherman's effectiveness. In today's terms these are called "force multipliers."

Field fixable. One big factor was that the Sherman was both reliable and maintainable. The tanks didn't break often and when they did, repairs were usually easy and in many cases, could be completed in the field. The result was a higher percentage of Shermans were available for combat. By comparison, the big German tanks were often plagued with engine and transmission failures, road wheels jamming, and a host of other problems that would leave them disabled in combat. There are many reports of German tanks abandoned and even destroyed by their own crews because they had broken down. So the Sherman's reliability and maintainability played a huge role in World War II where sheer numbers were a deciding factor.

Another important factor was that the Sherman's turret rotated quickly. Often this allowed the Sherman to get off the first shot, and in many cases that was the difference between life and death.

So how did the Sherman get a bad image among so many armor buffs? Well, it had its flaws too. One very bad design oversight was unprotected ammunition, so that a shot that penetrated the tank often caused a catastrophic explosion. This would later be corrected by introducing a "wet" stowage system in which the ammo was stowed in glycol-filled bins. But for much of World War II, the tank crews lived in fear of the tank exploding.

Compounding this was the fact that the Sherman would often have to fight more heavily armed and armored German tanks. At longer ranges, these tanks had cannons that could penetrate the Sherman's armor, while the Sherman's cannon could not. So tankers were confronted with the fearful prospect of being picked off with no way to retaliate. Worse was that the United States had no other armored vehicles it could employ to rectify this situation until the introduction of the M36 Jackson tank destroyer in the winter of 1944.

So in retrospect, it's probably a fair statement that the Sherman had many great features and a few flaws. But the Sherman also proved highly adaptable, and this factor would most certainly be the driving factor in its extraordinarily long service life. Even during the few years of its World War II service, significant design changes to the Sherman were introduced.

Evolution of the Sherman. One such major change was the introduction of a larger turret and the same 76mm gun used on the U.S. tank destroyers. While this gun was not a great anti-tank weapon, it was a big step up from the 75mm gun, and the U.S. manufactured a specialized anti-tank round, which added even more effectiveness. While this was being introduced to the production line, the British simply fitted their 17 pounder (76.2mm) anti-tank gun into their 75mm Shermans, creating the Firefly, which was an outstanding anti-tank variant.

As previously mentioned, the problem with exploding stowed ammunition was corrected. The introduction of extended

track end connectors (duckbills) could be field retrofitted and helped overcome the problems caused by narrow track. Later a whole new suspension, called HVSS, would be introduced to offer a more-permanent solution. Also, the Sherman's hull design would undergo a significant change to incorporate larger hatches allowing the crew to escape quicker.

So the later production M4A3(76) HVSS Shermans being produced in the summer of 1945 looked radically different than the M4A1 DV Shermans first used at El Alamein only three years earlier.

Soldiering on. After World War II, this tremendous adaptability would be exploited to the maximum. The United States' use of the Sherman would see a resurgence during the Korean War, where it and the M26 Pershing formed the backbone of the U.S. armored fighting force. As in World War II, the Sherman's reliability would endear it to its crews and commanding officers alike.

But the vast majority of the Sherman fleet was withdrawn from service after World War II by the U.S. and Britain. Many were given to allied armies, which often made the enhancements that had been developed during World War II. For example, engineers in Patton's army had realized that it was possible to retrofit the 75mm-equipped Shermans with the 76mm gun and would have done so had the new-production 76mm Sherman not arrived in large quantities. So after World War II, many Shermans were re-gunned in this manner by the allied forces. Similarly, it was determined that by adding spacers to the narrow track suspension, an inner row of duckbills could be added, reducing the ground pressure to about that of the HVSS equipped Shermans. So these two affordable and effective modifications enabled the basic Sherman to remain effective for some years to come.

As a result, many emerging nations procured sizeable numbers of Shermans, notable among them India and Pakistan. In fact, both countries would deploy their Shermans in their conflicts and while there is no record of Sherman-vs.-Sherman battles, both countries would end up recovering each other's Shermans, repairing them, and returning them to battle, thus writing an unusual chapter in the Sherman's history.

The ultimate Sherman. But the most significant use of the Sherman after WWII was by Israel. The Israelis started using the Shermans almost immediately after their declaration of independence when they were able to employ a small number to support the initial fighting. They would procure more through highly creative means such as buying them as scrap from Italian junkyards.

Eventually the Israelis would procure them in more conventional ways, particularly from France, which was providing direct military assistance. The Israeli-French relationship would also be used to create the two most-significant upgrades of the Sherman in the post-war era, the M50 and M51.

By the mid-1950s, it was becoming clear to the Israelis that their 75mm-equipped Shermans were not going to be effective against the much newer Soviet T-54/55 tanks being supplied to their adversaries. While the Israel military was able to procure some British Centurions, they realized the need to upgrade their Sherman fleet.

Working with the French, the Israelis were able to fit a new French 75mm gun with a much longer barrel into a modified Sherman turret. In a strange twist of history, the French gun itself was derived from the German gun used on the Panther, which had been the Sherman's nemesis! And so was born the M50.

Initially, that was the only modification, but shortly thereafter, the Israelis replaced the narrow-track VVSS with the wide-track HVSS and also replaced the World War II-era engines with a new diesel engine, thus creating the M50 configuration most commonly seen in photos.

In yet another odd twist of history, Egypt, Israel's enemy, also operated a sizable number of Shermans that it too wished to update. Like Israel, Egypt turned to the French for assistance. Again like Israel, Egypt decided to update its Shermans with the same French 75mm, long-barrel gun! But this time, the French completely replaced the Sherman's turret with one from its AMX-13 light tank, which already used the same gun. If nothing else, the "AMX Sherman," as it was nicknamed, showed the tremendous adaptability of the basic Sherman configuration. But it was only in service for a short time with many being lost to the Israelis during the fighting in the 1950s and '60s.



For Israel, the M50 was a big success, extending the Sherman's life at a fraction of the cost of new tanks. So when Israel needed to update its fleet of M1 Super Shermans [the U.S. designation would have been M4A1(76) HVSS], the military planners embarked on a similar program. But this time they went big. Really big. With French help, the Israelis replaced the WWII-era 76mm cannon with a huge 105mm French cannon. In order to keep the recoil manageable, they had to slightly reduce the barrel length and develop a large and unique muzzle brake that would be the most recognizable feature of what would be named the M51.

For most students of armor, this is the ultimate Sherman. The M51 was more than capable of defeating the newer Soviet tanks and played a pivotal role in both the 1967 Six-Day War and the 1973 Yom Kippur War. Some would remain in reserve service with Israel into the 1990s.

The last battle. But some M50s and M51s would find new homes and thus continue to remain in active service. In particular, a sig-

The iconic Sherman in the flesh. Here's an M4A3E8 last used by the U.S. Air Force as an observation tank. It's now found in the American Military Museum in South El Monte, Calif. (www.tankland.com). As an observation tank, it had no barrel, so the museum had a replica barrel made to represent how the real one would look. This tank was featured in the TV series, "Tank Overhaul" on The Military Channel in which it was going through an engine change.

nificant number of both versions would be sold to Chile. There, both variants would get yet another engine change, and the M50s would have their 75mm gun replaced with a 60mm hyper-velocity gun that had anti-tank penetration capabilities equal to the 105mm guns on most tanks of the time! Coupled with the Sherman's relatively small size, this configuration proved quite effective in the mountainous terrain of the Chilean-Argentine border, and it is this variant that is believed to be the last one used in active duty, being retired sometime around 2002.

So as the Sherman ended its roughly 60-year active service life, it's worth noting that some of the tanks in the final configuration in service with Chile can barely be recognized from the original configuration to which they were manufactured.

Consider, then, that some Shermans started out as the long-hull M4A4 version

with the 75mm gun and Chrysler multi-bank engine. They were manufactured in the United States and operated by the British in WWII. After the war, they were procured by France where the engine was changed to the radial engine used in the M4 and M4A1 variant. Later, they would be sold to Israel where they would get the new long-barrel 75mm gun, a new diesel engine, and the HVSS suspension. Still later, they would be sold to Chile where they would get yet another new diesel engine and a 60mm gun.

If you're keeping count, that's two suspensions, three guns, and four engines on the same tank! No wonder that it was in service for 60 years.

So is the Sherman a great tank? I'll leave that for you to decide. But one thing I know for sure is that it is definitely a great tank to model.

1 Perfect starter SHERMAN

M4A1(75) Sherman – Northwest Europe during World War II

The M4A1(75) is probably the most commonly seen Sherman model. It has the smooth cast hull and the original turret housing the 75mm gun. This variant of the Sherman served on almost all fronts in World War II. In its early form, it was the first to enter combat when the British employed it at the Battle of El Alamein (Egypt) in 1942. It would also serve with U.S. forces in North Africa. The M4A1(75) would see action in Sicily, Italy, northwest Europe, the Pacific Islands, and the Philippines, so you can find this tank just about anywhere.



This project starts with the Tasca M4A1 “late” Sherman. Upgrades include a Formations pioneer tools set and Dragon “duckbill” track kit.

Adding the extra detail parts and a figure, together with a good paint and weathering job, result in an accurate and good-looking model.



1 Rivets on the lower hull need to come off to represent the more common welded-hull version. Easy to fix with a microchisel.



2 It's important to glue all the lower hull parts together at the same setting to insure a proper fit with the upper hull.



3 I wanted more texture on the transmission cover. This is accomplished by stippling plastic softened with liquid cement.

As I thought about what I wanted for the first model in this book, I asked myself what I would build if this were my first Sherman. I'd want to build a modern, well-made kit of a recognizable variant. The Tasca M4A1 "Late Sherman" fits that description perfectly.

Tasca has recently released a series of M4A1 kits, and they are some of the best Sherman models available. They are accurate, and Tasca has done a great job of engineering the kit so all of the parts fit well, making assembly straight forward. It is entirely possible to make an excellent Sherman model straight from the box.

I am going to add a few upgrades that enhance the model and further simplify the building process. But for the most part, this build-up is really about getting your feet wet and learning how to make a great Sherman model without a lot of effort and frustration.

Getting started. Some new kits are so well designed and produced that modelers refer to them as "shake-and-bake" kits—so well made all you have to do is shake the box hard enough and the model will build itself. That's an exaggeration of course, but this kit does go

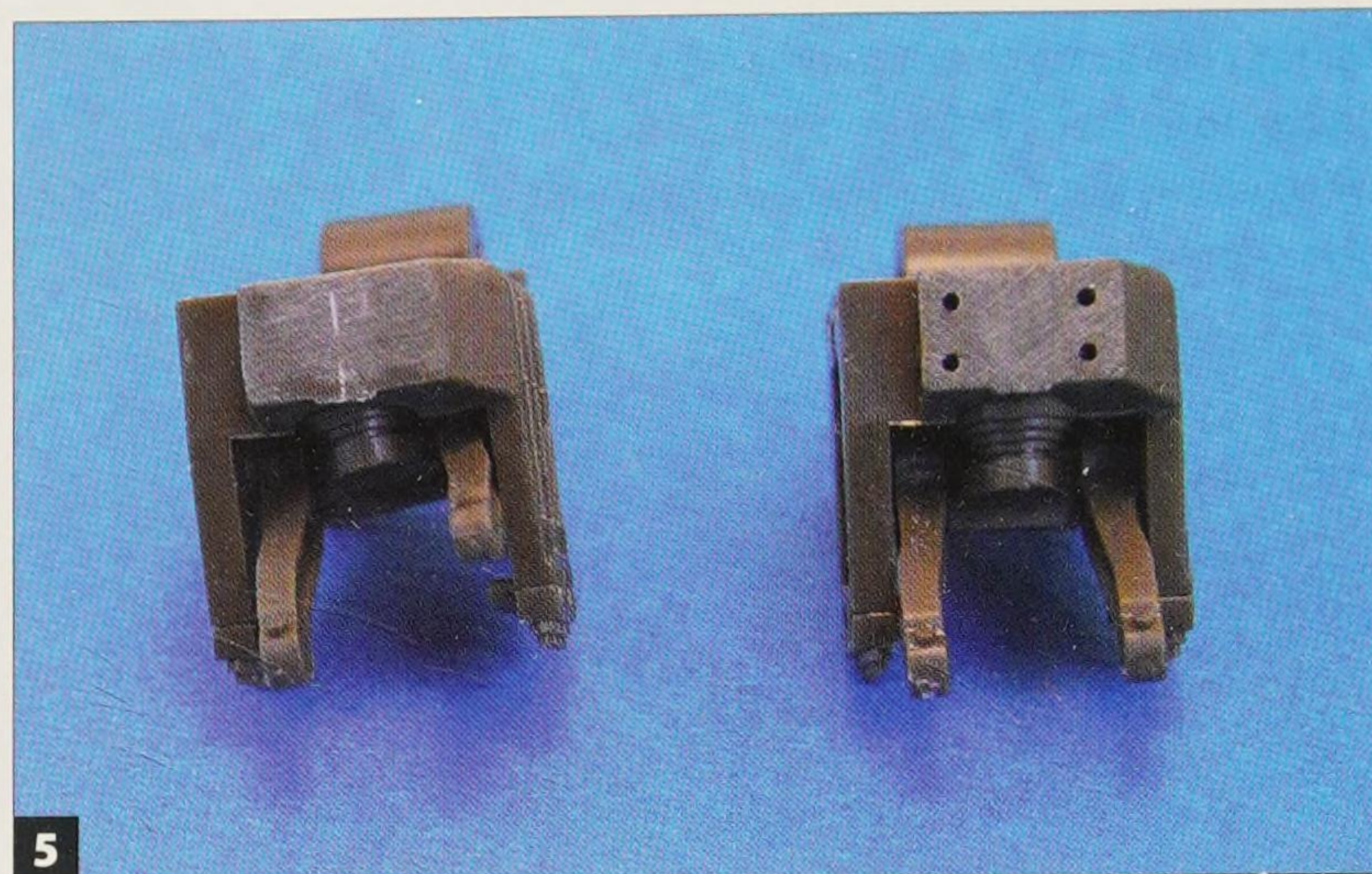
together so well you have to think of it in that class. So why add any upgrades?

I chose to add Formations Pioneer Tools with Straps because they add to the overall look of the model and they are easier to use than trying to make straps and buckles out of lead foil and small wire.

I added a metal barrel because the kit barrel follows the traditional armor model design with the barrel made into two halves that you must glue together and then sand smooth while keeping it round. It's a real pain, and these days, a metal barrel isn't an expensive addition. Modeling is a hobby I want to enjoy, and spend-



The same texturing method improves the upper hull, which comes together with the transmission cover and lower hull.



The Sherman's main spring housing could be reversed to fit either side of the tank, so visible holes on the model's housing need to be drilled.

ing a couple bucks to eliminate a tedious and frustrating step is worth it.

Finally, I added Dragon's tracks with the extended end connectors (EEC), commonly called "duckbills," for variety. The kit tracks are perfectly usable, but I love the look with the duckbills, and Dragon now sells its "DS" tracks for a very reasonable price. So why not?

Construction. Even though this kit is just about as easy to assemble as any model you'll find, there's always something. In this case it is that Tasca represented a riveted lower hull, whereas nearly all but the earliest Shermans used a welded lower hull. So Tasca, in its supplemental instructions, shows you which rivets to shave off. It's not hard. I used a microchisel, **1**, but you can also use a hobby knife with a curved blade. Now in all honesty, you can also skip it completely. It's pretty tough to see the rivets behind the suspension and tracks, so if you don't want to deal with it, then don't. You can also just shave off the rivets on the side walls and forget about the bottom since that's pretty much invisible unless you pick up the model.

A detour about accuracy. Let me take this opportunity for a brief detour to talk a bit about technical accuracy. The great thing about our hobby is that you will meet people who believe in all levels of technical details. On the one end of the spectrum, you have a large group that would say "if it looks like a duck and quacks like a duck then it's a duck." They aren't too concerned if a dimension isn't quite right or if a certain detail is misrep-

resented or even if the markings aren't quite right.

On the other end are the "rivet counters." These are modelers who pride themselves in making sure their models are accurate down to the last tiny details. For those of you who frequent the many Internet forums, you'll notice that these groups tend to clash. But I say there's plenty of room in this hobby for both.

Me? I'm probably somewhere in the middle, but leaning toward the rivet counters. I try to balance the technical details with the practicality and enjoyment of modeling. So I acknowledge in advance that not every Sherman in this book will be 100 percent accurate to the last detail. But I will try to correct the most-notable issues and add details that I believe will enhance the overall look of the model and improve its technical accuracy.

Such a sweet kit. The first assembly step is to build the lower hull. Tasca's lower hull is built up from a number of flat parts instead of the more traditional tub used by most other manufacturers. Presumably this is to allow for greater detail. Thankfully Tasca has engineered these parts to be self aligning, so as long as you glue all of the pieces together at roughly the same time, **2**, the hull ends up in the correct shape and will fit nicely to the upper hull. I always start by gluing the engine firewall (the center bulkhead part) to the lower hull. While the glue is still wet I then glue the two side plates to the lower hull and the firewall followed by the rear hull plate. Then I'll add the sponson plates and the lower hull is done. I found that I only

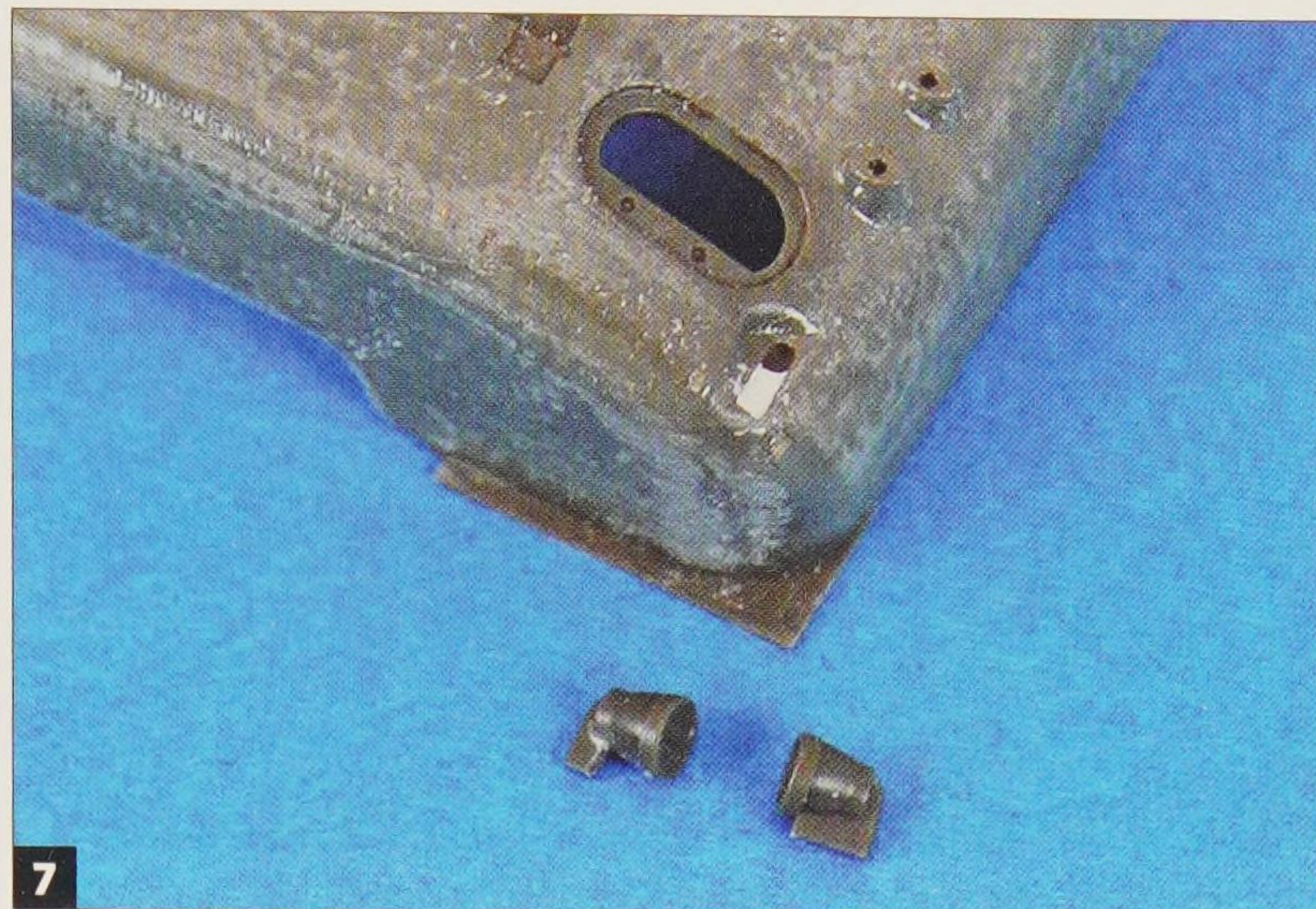
needed a slight amount of putty around the rear plate to get a good fit. The lower hull assembly was completed by attaching the rear air filters and the idler mounts.

Casting texture. The next step is to assemble the transmission cover, **3**, and then attach it and the upper hull. But first I decided to add a little more casting texture to these parts. This is really an optional step. Technically, the very light casting texture that Tasca provides on these parts is pretty accurate considering the model is 35 times smaller than the real tank. American castings were generally pretty smooth as compared to, say, a Soviet T-34 or IS-2. But the problem is that the model ends up looking like it has no casting at all. So many modelers, including me, like to add a little texture so it can be seen once the model is completed. What's correct? I'm not sure there's a good answer. It's really a matter of preference.

To add casting texture I've come to really love a simple method with liquid cement. In this case I'm using Tenax, but the same method works with most liquid cement. The process is pretty straightforward. You simply use a stiff, cheap, nylon paint brush to first "paint" an area with the liquid cement and then while it's still wet just jab the end of the brush into the painted area. You should see it make a rough impression. This method is called stippling. Repeat this on the area that's wet, and keep painting and stippling until you've covered the whole part to be retextured. You can get a heavier texture by stippling repeatedly. Don't worry if the initial effect looks too strong—let the



6 The add-on armor plate could need sanding, but wiping excess putty with nail polish remover first helps fill and avoids sanding.



7 It's a little thing, but it's more accurate to remove the front section of the blade on the rear taillight.

part dry for about a day and give it a light sanding to take off the high spots. The result is a nice casting texture.

What I really like about this method is that it is very controllable. The amount of texturing can be controlled by the amount of stippling, and if you overdo it you can fix it by sanding a little more. That's nice because the odds of a serious problem are pretty low. One simple tip is that if you haven't done this before, practice on the inside of the hull where no one can see it. Once you're comfortable with the process, you can apply it to the outside.

After I retextured the transmission cover and upper hull, **4**, I attached them to the lower hull. The fit is great and only a little putty is needed to blend the suspension plates to the upper hull.

Suspension. Tasca started down its path toward a Sherman series by first offering two sets of suspension for use in upgrading other companies' kits. First came the narrow-track (called VVSS), mid-production suspension with the straight return roller arms and then the late-production VVSS with the upswept return roller arms.

Later Tasca added the very early VVSS with the return roller on top of the main spring housing, which is the design used on early Shermans and on the earlier M3 Lee/Grant.

Since these were sold as stand-alone sets, they have a number of different road wheels, idlers, and drive sprockets, along with adaptor plates for different kit manufacturers' hulls. So when Tasca started to make its own Sherman kits, the company just included the appropriate suspension

set, in this case the VVSS with the straight return roller arms.

This suspension set is very detailed yet pretty easy to assemble. It is also the only set on the market to allow the proper articulation of each road wheel, which can be quite useful if you plan to place the model on uneven terrain.

Assembly is straightforward per the instructions, but there is one improvement that needs to be made: On the real tanks, the suspension was designed to be used on either side of the hull. This was accomplished by unbolting the rear return roller bracket and bolting it to the other side of the housing when the assembly was used on the opposite side of the tank. As a result, there are always four holes visible on the front face of the main spring housing, **5**.

Drilling out these holes is easy and the only question is how to locate their positions. Personally I just try to make sure the holes are aligned both horizontally and vertically to make a rectangular pattern. I've seen other modelers go to the effort of determining the exact positions and even make a template. More power to them, but I've never noticed much difference in the final result so I just place a pen mark using my eyes for basic positioning.

Once they were assembled, I glued all of the bogies to the hull. As I mentioned previously, the road wheels are designed to move up and down just as in the real tank. But if you plan to place the model on flat ground, as I do, it's important to glue the road wheels in place so they don't move up and down. The reason is that the Sherman has very high track tension and

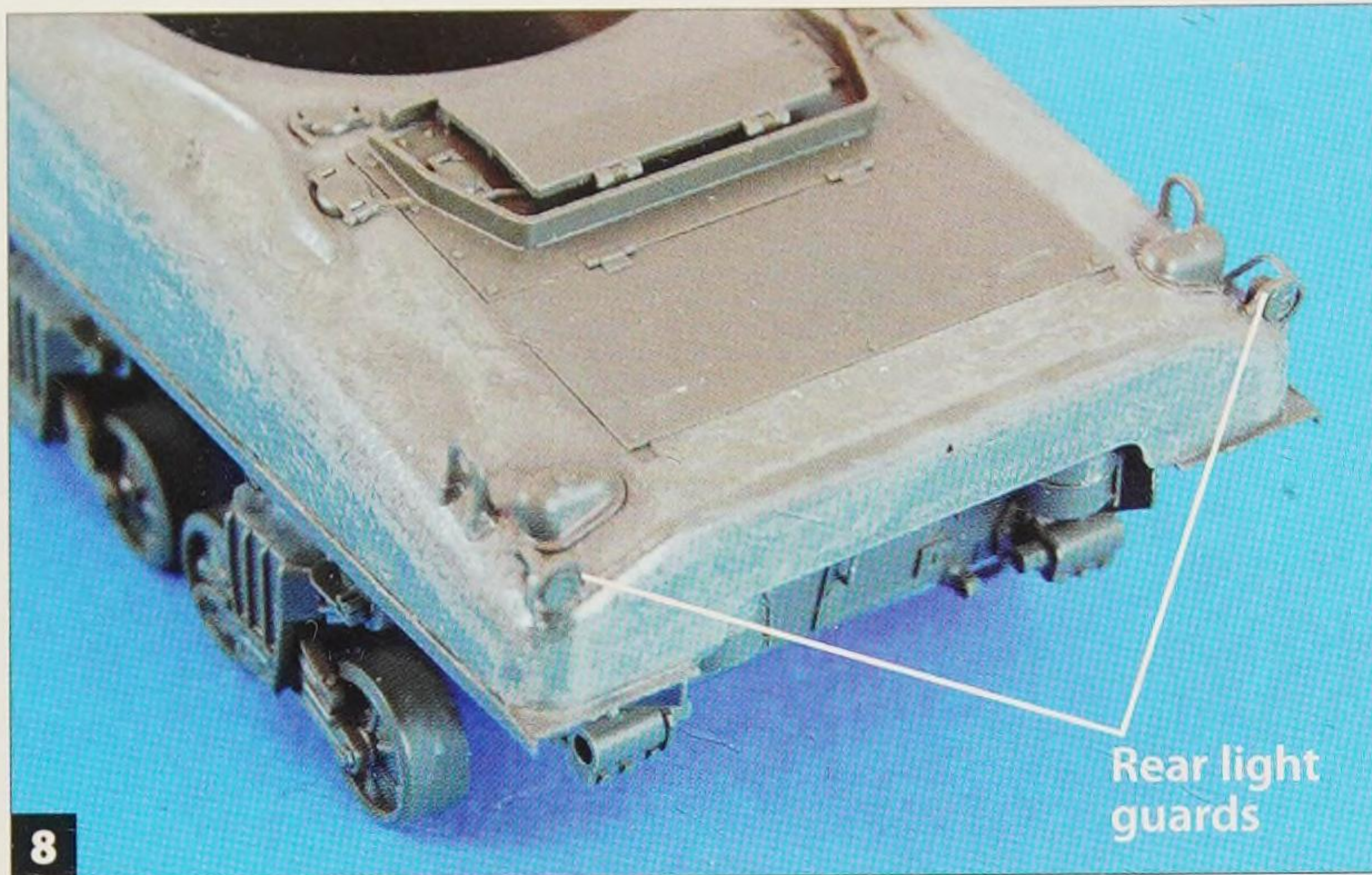
if you don't lock out the suspension, the first and last road wheels on each side will ride up under the track tension. The result is a curving look to the lower track run which is incorrect. So the simple fix is to glue the road wheel brackets to the rocker arms so that the suspension no longer moves around.

Hull details. With the bulk of the major assembly completed, it is time to turn to the hull details. The first step is to attach the add-on armor plates: one on the left side and two on the right side. These plates were added to provide additional protection for the stowed ammunition since early experience showed that hits in these areas often led to catastrophic explosions.

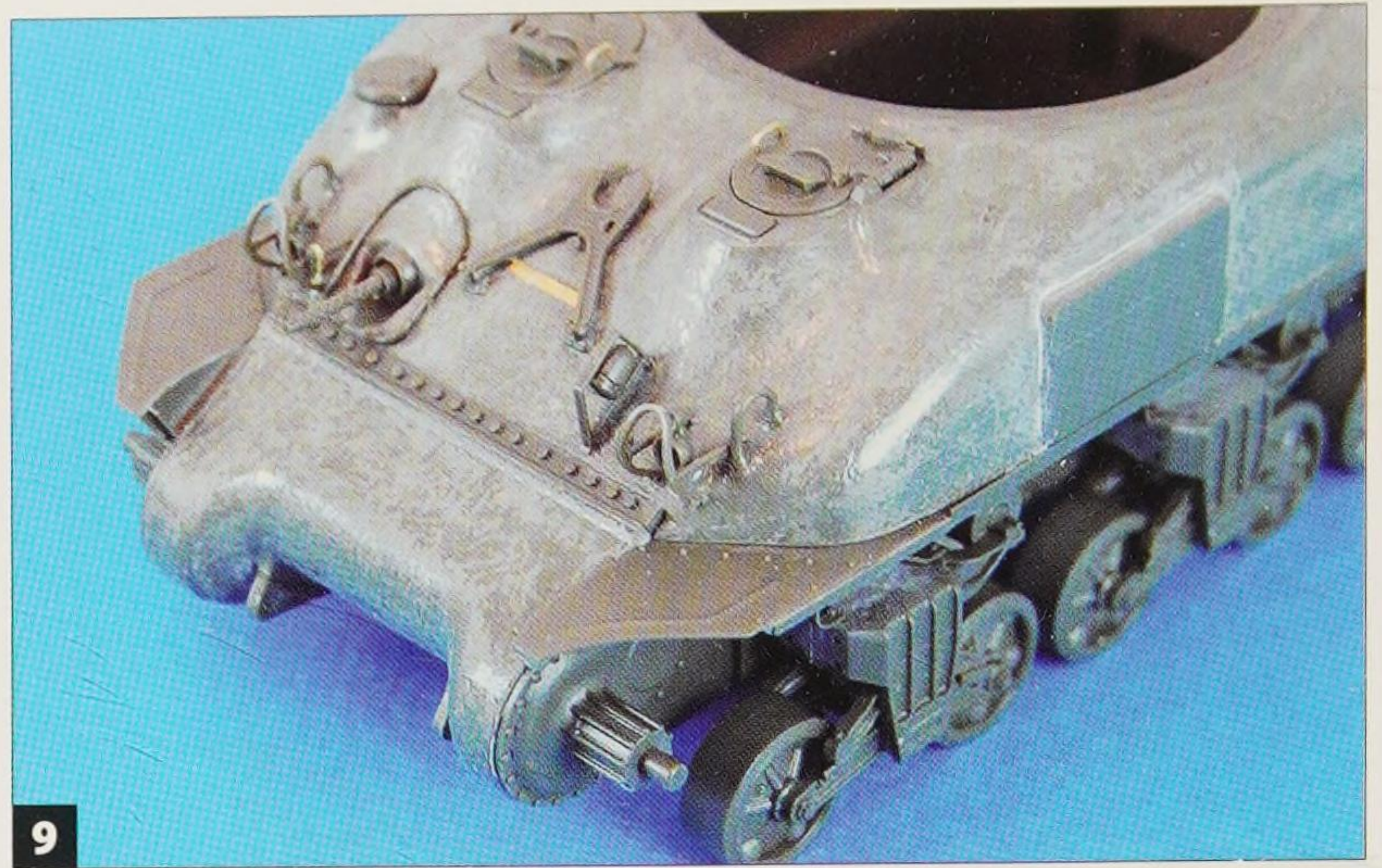
Tasca provides these plates as separate parts and they are beautiful with excellent fit. But the fit must be seamless since the real plates were welded all around their edges. In order to eliminate any gaps, you have to use some putty and thus risk sanding off the excellent weld detail on the parts.

But there's a nifty trick that a friend told me about. When you first add the putty, use a small cotton swab dipped in nail polish remover, **6**, to wipe off the excess putty. The nail polish remover softens the putty enough to wipe away most of it while still allowing it to fill the cracks. The result is no loss in detail and no gaps.

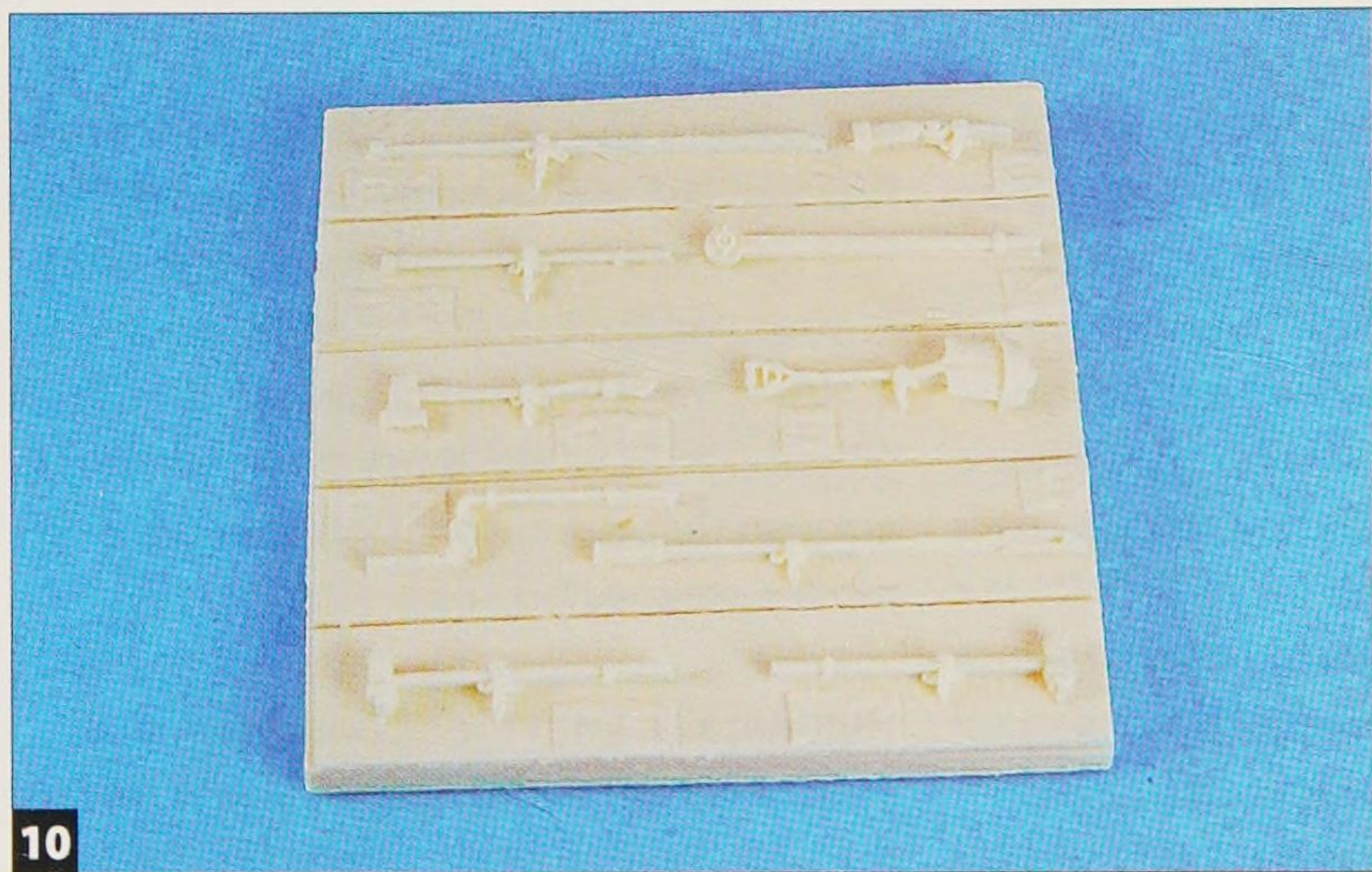
With the plates in place it's time to start adding the small items on the hull. But first there is a small and easy modification to the rear taillights. Tasca incorrectly molded the mounts as a long blade that



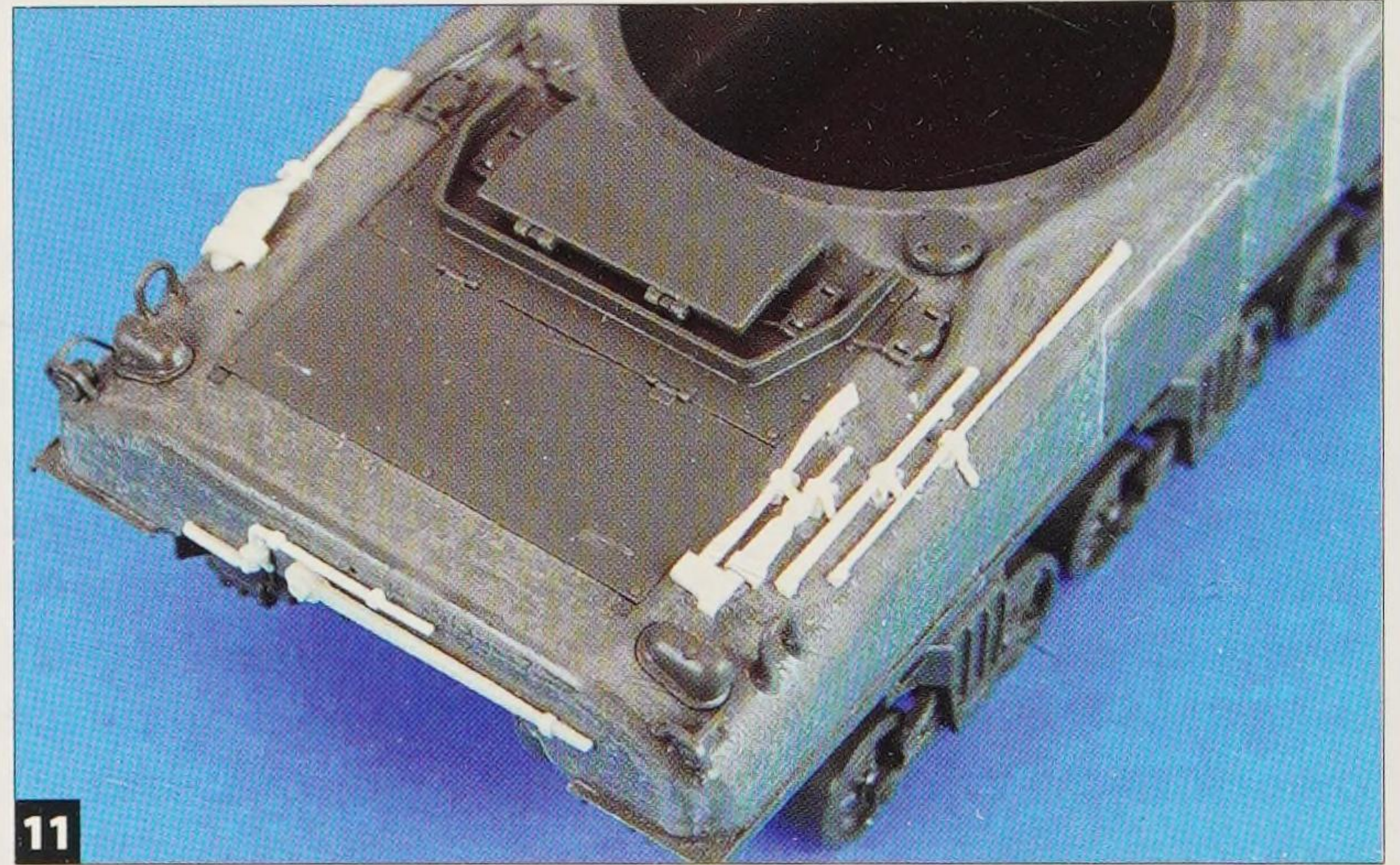
8 Construction of the rear hull goes smoothly per the instructions.



9 Front hull details are excellent, but adding the small chains is a nice touch.



10 These pioneer tools appear locked in their resin casting, but cutting along engraved lines makes it easy to get at them.



11 Scoring along each tool's edges pops them free. A little cleanup, and they're ready for the hull.

runs along the bottom of the light. In fact they are more of a bracket coming off the back of the light. Fixing this is a simple effort of snipping off part of the blade on the light and adding a tiny amount of putty to the indentation in the hull, **7**. It's a minor improvement but the time required is small enough to be worth it.

The rest of the rear hull details are easily assembled per the instructions, **8**. One point of note is the taillight guards. Tasca provides these in plastic and they are a little thick. I can live with it, but you can replace them with photoetched parts if you want to be even more accurate. Thankfully, Eduard makes a small and inexpensive photoetched set called US Light Guards that includes both the front and back light guards. I will use this set in the fourth build-up, but I'm OK using the plastic ones since they aren't that thick.

The front hull details are also pretty well rendered by Tasca so very little extra work is needed. There is, however, one simple but useful update. Mounted to the

inside of the headlight guards is a small post. This post is just a holder for the caps that are placed over the hull openings when the headlights are not mounted. There is a small bit of chain that runs from the cap on top to the bottom of the post, and adding this is a nice touch.

These chains are tiny, so I've found that using photoetched parts is the easiest solution. Aber makes a nice set of photoetched chains, **9**, that works great for this application. Cut a length of chain to about 5mm and glue it to the side of the post. When the glue dries, bend the ends over the top and bottom and you're done.

Pioneer tools. Who would think that so much effort in modeling is devoted to properly replicating shovels, axes, and wrenches? The pioneer tools are an eye-catching part of any model, so making them look great is worth the effort.

Tasca went to a lot of effort to make really nice representations of the tools on the Sherman. However, the company rep-

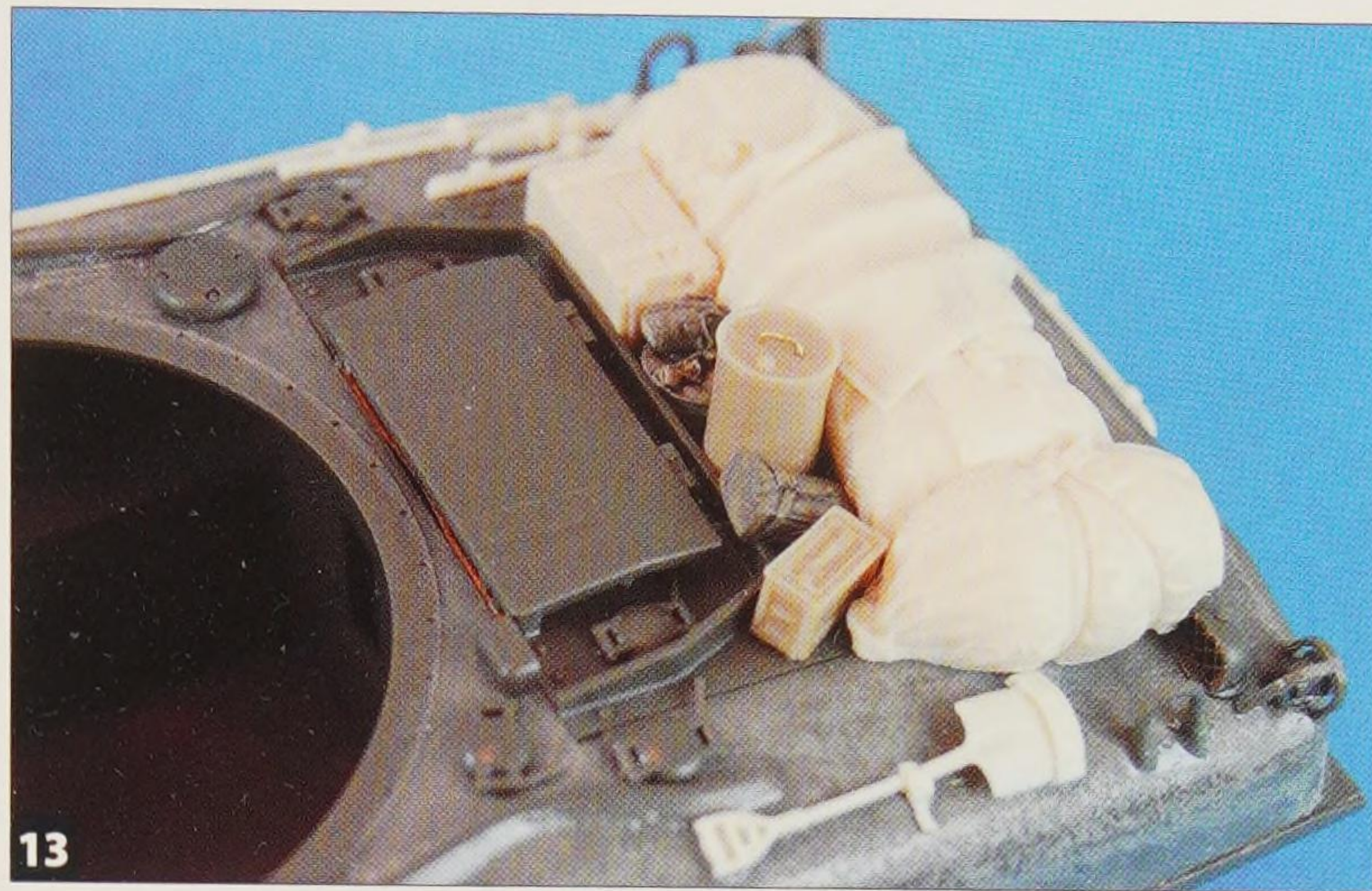
resented the tool straps by a simple band around the tool, and it just doesn't look right. Bummer.

Fortunately, a company called Formations sells a neat set of resin tools with brackets and straps molded right on, **10**. To use these tools you first cut the resin block into five pieces along the engraved lines. This gives you easy access to both sides of each tool. Then take a hobby knife with a new No. 11 and drag it in reverse, scoring along the attachment line of the tool to the pour block. I start with the tool straps then progress to the mounting brackets on the ends of the tools and finally run the blade along the length of the tool. At first it seems that nothing is happening, but after a few scoring passes the tool just pops off. After a bit of clean-up, you can glue the tools onto the model.

I recall that I was very skeptical when I first went to use these tools since I thought I would break them for sure. But I was wrong—they ended up being easy to use and look great, **11**. One tip: Forma-



12 Shermans in the European Theater were often piled with stowed gear. Adding it gives the model additional realism.



13 Besides the Blast Models stowage set, I added a .50-caliber ammo can and a wood box, mostly to add other colors.



14 Formations' tow cable set just looked better than Tasca's, and now I have extra cables for future Shermans!



15 The turret requires some filling and sanding, so we might as well retexture the whole thing with the stippling method.

tions provides several extra tools in the set, so when you're using this set for the first time, practice on the extras first to get the feel of it.

Stowage. One thing I really love about Shermans operating in Europe is that they are often seen with tons of stowage, **12**. If you wish, you can load them up with all kinds of things including some "souvenirs" like suitcases, furniture, and other crazy items. If you're going to build a few Shermans, I highly recommend doing this at least once\ just because it's a lot of fun. But for this model, I'm going to keep the stowage to a modest level.

When I first started modeling, I always painted the stowed gear separately and then added it after the tank model was also painted. But I was always fighting glue marks, and the stowage never looked completely integrated. After reading enough magazine articles where people put all their stowage on the model before doing any painting, I decided to try that

method. Boy, do I wish I'd done that sooner. Trust me, it's much easier and quicker. You will be surprised by the results and even if you think you can't brush-paint, the odds are you can paint well enough to handle the stowage.

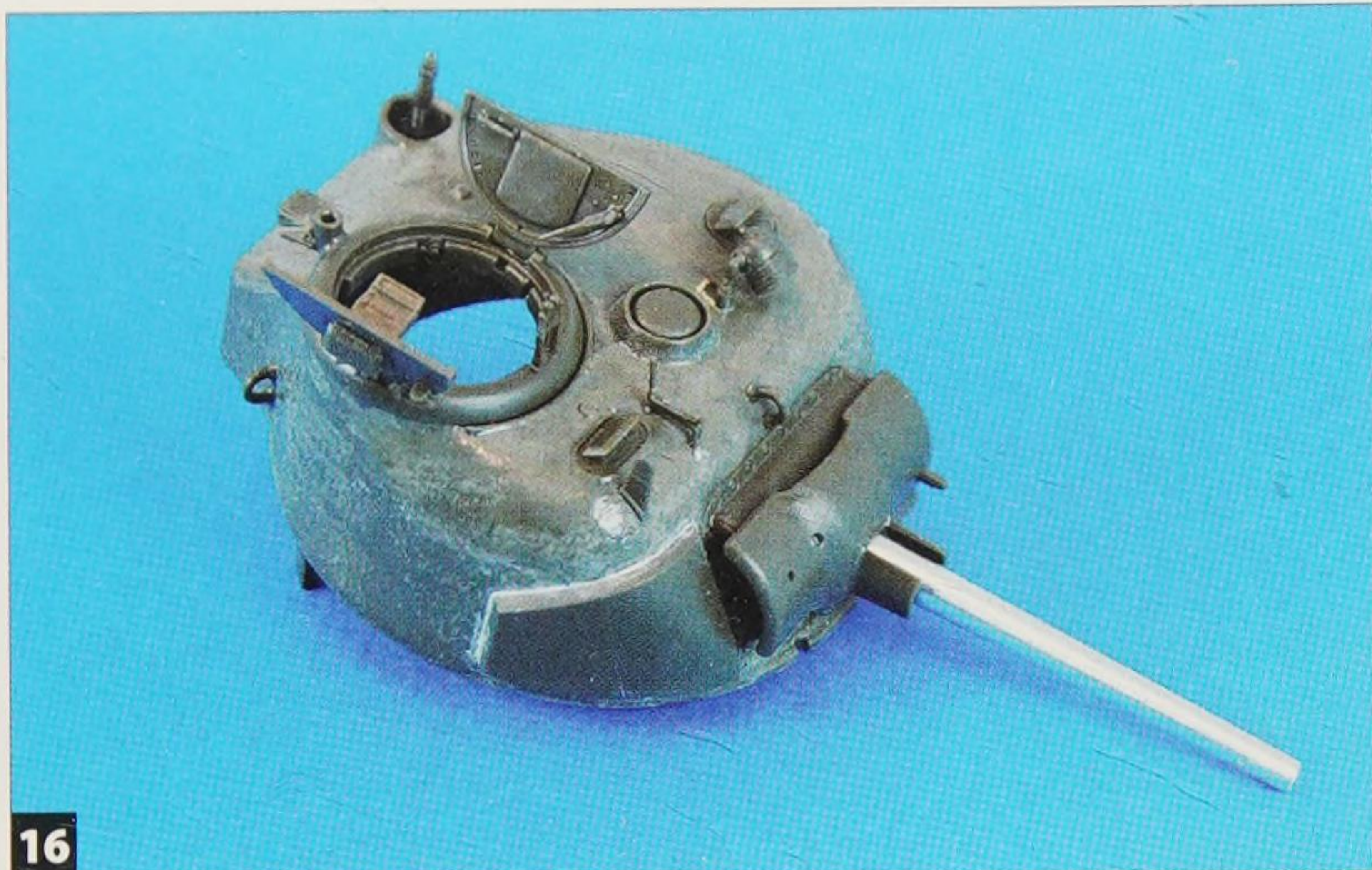
Nowadays, adding stowage has gotten even easier as a number of aftermarket companies are selling stowage sets that have whole piles of gear cast into a single piece. One company, Blast Models, makes the set I used for this model. They make several sets for the Sherman. You can literally take these items out of the package, clean off the pouring block, and glue them to the model. How much easier can it get?

But I do like to add a few extra things to help the big block of stowage look a little more integrated. By adding a couple of extra items, I can conveniently hide any gaps and also provide a bit of variety. So I dug a couple of items out of my spares bin. Most are from Verlinden sets I've bought over the years.

How did I choose the extra items? Color. Most of the packs incorporated into the Blast set are going to be shades of green and tan, so I selected items that would have different colors to give the final model a more appealing look. I chose a wood box, an oil can, which I'll paint black, and a .50-caliber ammo can, **13**, which will be dark green but has a cool yellow stencil on the side facing outward.

The final item I added was the tow cable, **14**. This is also a Formations item. For some reason, the Tasca part looks too small so I switched. The Formations set contains enough cable ends for six cables so you will be seeing these on all of the build-ups.

Turret. Turret assembly pretty well mirrors following the steps for the hull. Just as on the upper hull, I retextured the turret shell. In this case, it is pretty much a necessity since the lower and upper halves meet along the side of the rear bustle, **15**, and must be filled and sanded. So one way



16

Another armor plate was added to a spot where field experience found the casting too thin. Use the same putty fix as in photo 6.



17

The M2 .50-caliber machine gun is a Tasca item that is also sold separately, and it's a beauty.



18

The Dragon "duckbill" tracks require some finesse to make the connection as they're a little long.



19

Cutting off two links yields the right length. Liquid plastic cement on the remaining mating edges will hold.

or another you have to add some texturing to that area. I chose to simply cover the whole shell. One interesting point is that you can use the texturing method I described right around the casting numbers on the top of the shell. By being careful, you can avoid ruining those numbers and thus not have to replace them.

As with the upper hull, there is an add-on armor plate over the front right part of the turret, **16**. This is an area where the casting was a little thinner and the tank was found to be vulnerable, so the plate was added. Again I used nail polish remover and putty to eliminate any gaps.

About the only aftermarket item I added was the metal barrel. The kit barrel is split into halves, and even though the fit is good, you still must sand it to a smooth, round shape. This is a pain, and nothing is more annoying than painting your model and finding a flat spot that ruins the look. The metal barrels are cheap these days, so it's worth the investment.

I did also add a tiny length of chain running from the searchlight mount to the cap. Since this sits right on top of the tank, this little bit of chain actually adds a nice touch of detail in a very visible area.

M2 .50-caliber machine gun. Much as Tasca did with its Sherman suspension sets, the company also sells a pair of nice .50-caliber machine guns as upgrade kits, one of which is included in the kit. This beautiful rendering of the famous "Ma Deuce" (M2) gun is also easy to build and install, **17**. Best of all, the sets come with options for WWII or post-war ammo can holders and as well as with different mounts to the tanks. You'll be seeing this kit used on a number of the build-ups in this book.

There's not much to do to this set other than to add the mount-locking handle and two small chains. It's worth it to add these extra details since the .50-caliber gun sits on the top of the tank where it's one of the first things to catch your eye.

Completing the assembly. The last step in the assembly is the tracks. Tasca's tracks are very nice, and I've used them many times. However, for this build-up I switched to Dragon's DS tracks, **18**, for the extended end connectors molded right on the tracks.

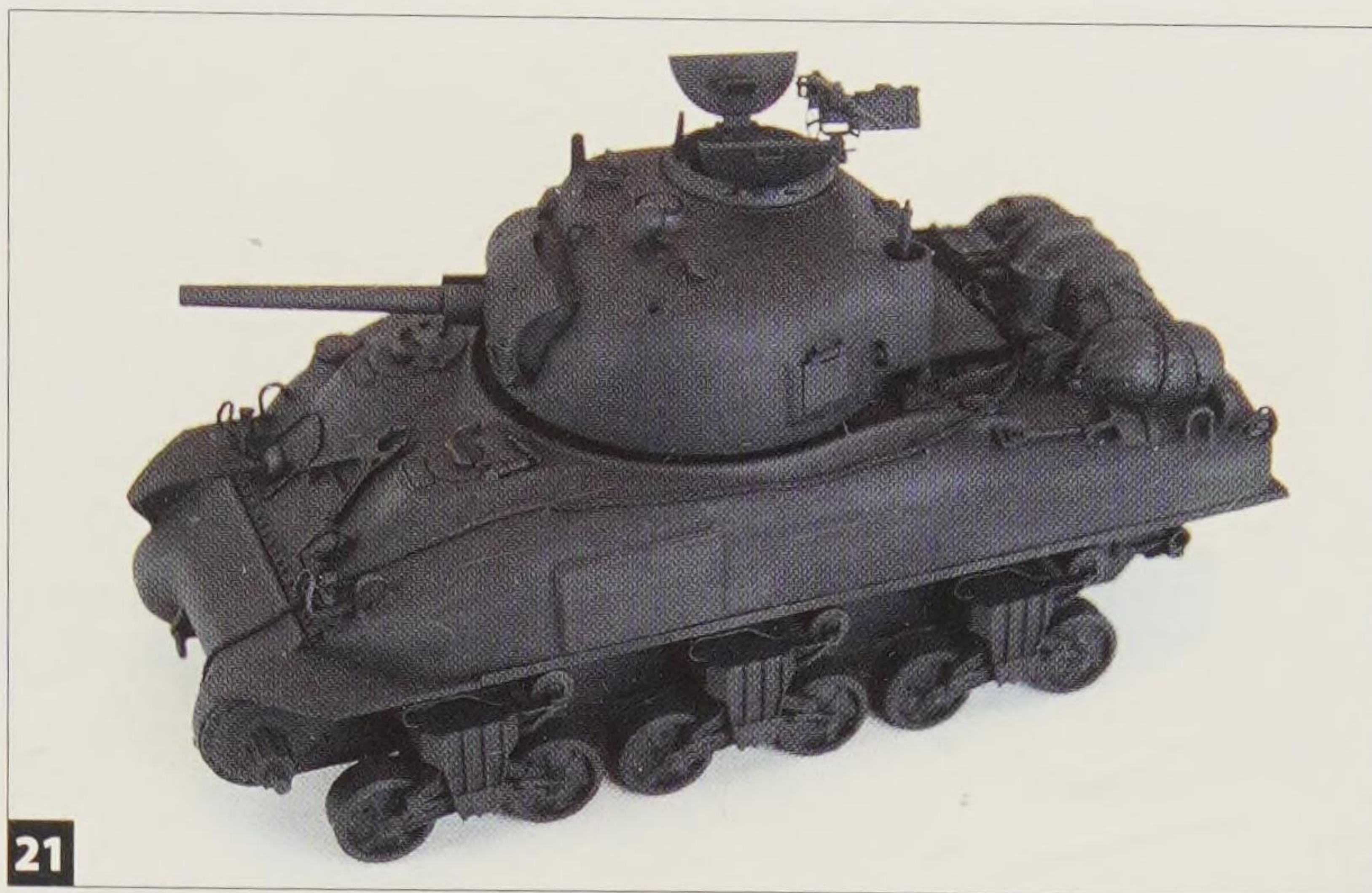
Nicknamed "duckbills," the end connectors were added to the tracks to reduce ground pressure and help keep the Sherman from getting bogged down in soft terrain. From a modeling perspective, they just look cool.

Using these tracks is easy since they are a single length per side. However, they are about two links too long, and unfortunately the attachment pads are only on the last two links, but the DS material can be glued together using liquid plastic cement such as Testors. The bond is strong enough to make it possible to glue the edges of two links together and still tighten the tracks sufficiently, **19**. So I cut off two links and glued them together. Now we're ready for the paint shop, **20**.



20

With tracks in place, the Sherman is ready for the paint shop.



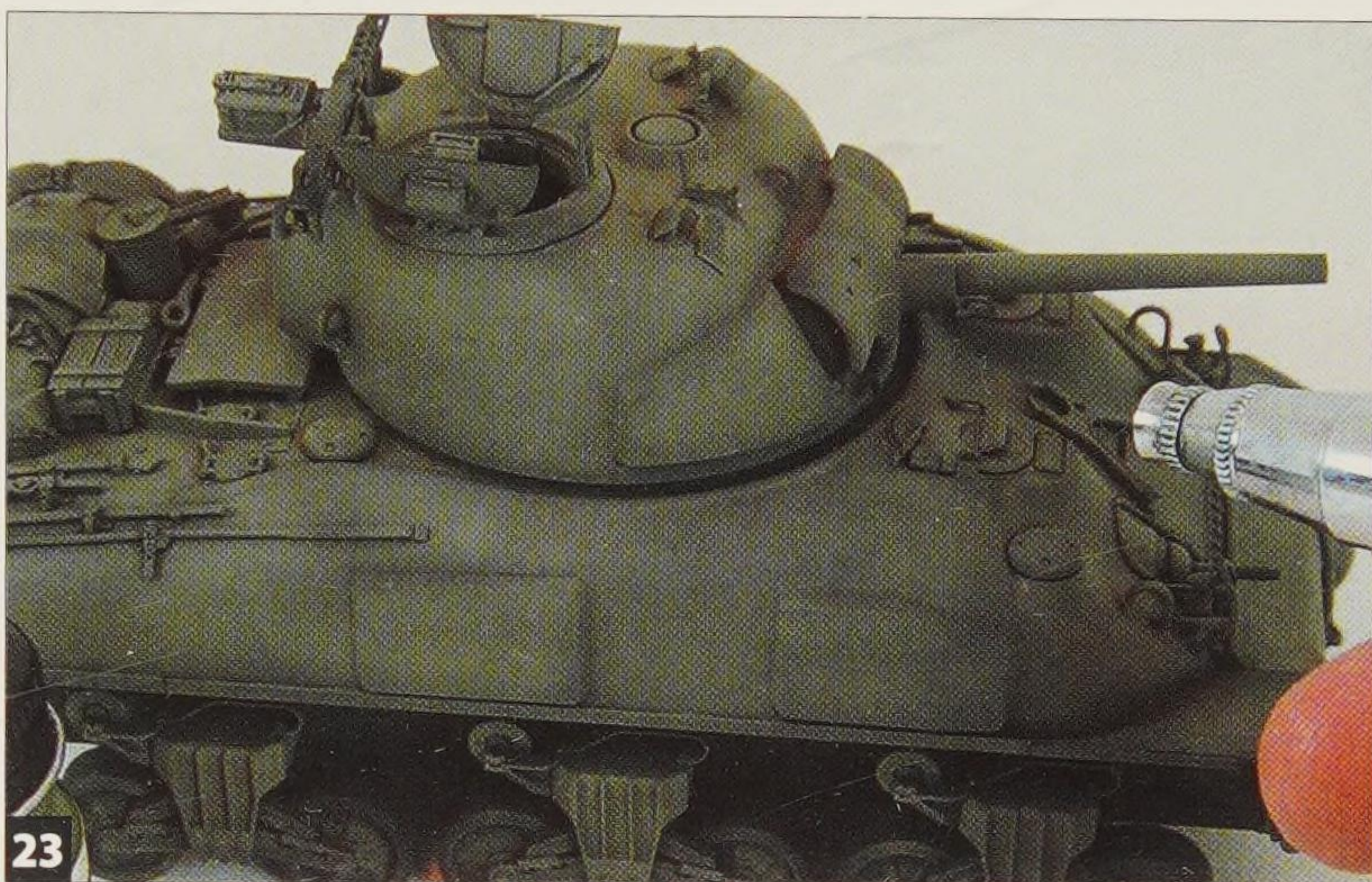
21

I'm an old-school "panel-fade" kind of modeler. The whole tank gets a dark base of flat black.



22

Next comes Olive Drab. I use enamels, and the Model Master line has a couple of "olives" that have become my standards.



23

The fading part comes from starting the full airbrush spray at the middle of each panel and letting it fade out toward the edges.

Painting. Don't hate me because I'm old school. Well, maybe not totally old school, but most of my painting methods go back a ways. I think it's great that so many people are experimenting with new techniques, and I do use some of them. But for the most part, I like the tried-and-true "panel fading" method I read about in a Verlinden book many years ago.

I have a couple of reasons for liking this method. Obviously I like the results, but I also like that it doesn't require any special skills other than to know how to use an airbrush. It's also forgiving, so when you make a mistake, it's easy to cover it up.

I will readily confess to having only decent airbrushing skills, and I just don't want to learn to be an expert. How do I know this? Well I have friends who are masters with the airbrush (some even do it for a living), and I can look at their results and know I don't have those skills. Instead, I've come up with a painting method that doesn't require such a high level of accomplishment.

The first step in panel fading is to paint the whole model a dark base color. For a dark green tank, I've found flat black works perfectly well, **21**. The next step is to airbrush with Olive Drab, **22**

I have always been fond of enamels, and Model Master makes two excellent colors: Olive Drab and Faded Olive Drab. As its name suggests, Faded Olive Drab is just a lightened version of Olive Drab, and that makes it perfect for panel fading.

The term "panel" refers to any part of the model that can be demarcated from another. For example, the engine deck panels on this model or the hull hatches. Even a weld line like those on the surface of the add-on armor plates can function as a demarcation line.

To accomplish panel fading, start by airbrushing in the center of the panel and work out toward the panel's edges, **23**. Near the edges leave a feathered line so that the base color shows through on the edges. The nice thing about this method is that you don't have to be great with

the airbrush because it is not necessary to feather precisely around the edges. In fact, a little variation gives the paint a greater sense of depth, which is the look you're hoping to achieve anyway!

After panel fading with Olive Drab, I then go back and do it again with Faded Olive Drab. This time I'm even less careful around the edges and I leave a pretty wide feather. Thus, the Faded Olive Drab is primarily in the center of the panels, and the color on the panels progressively darkens from center to edge.

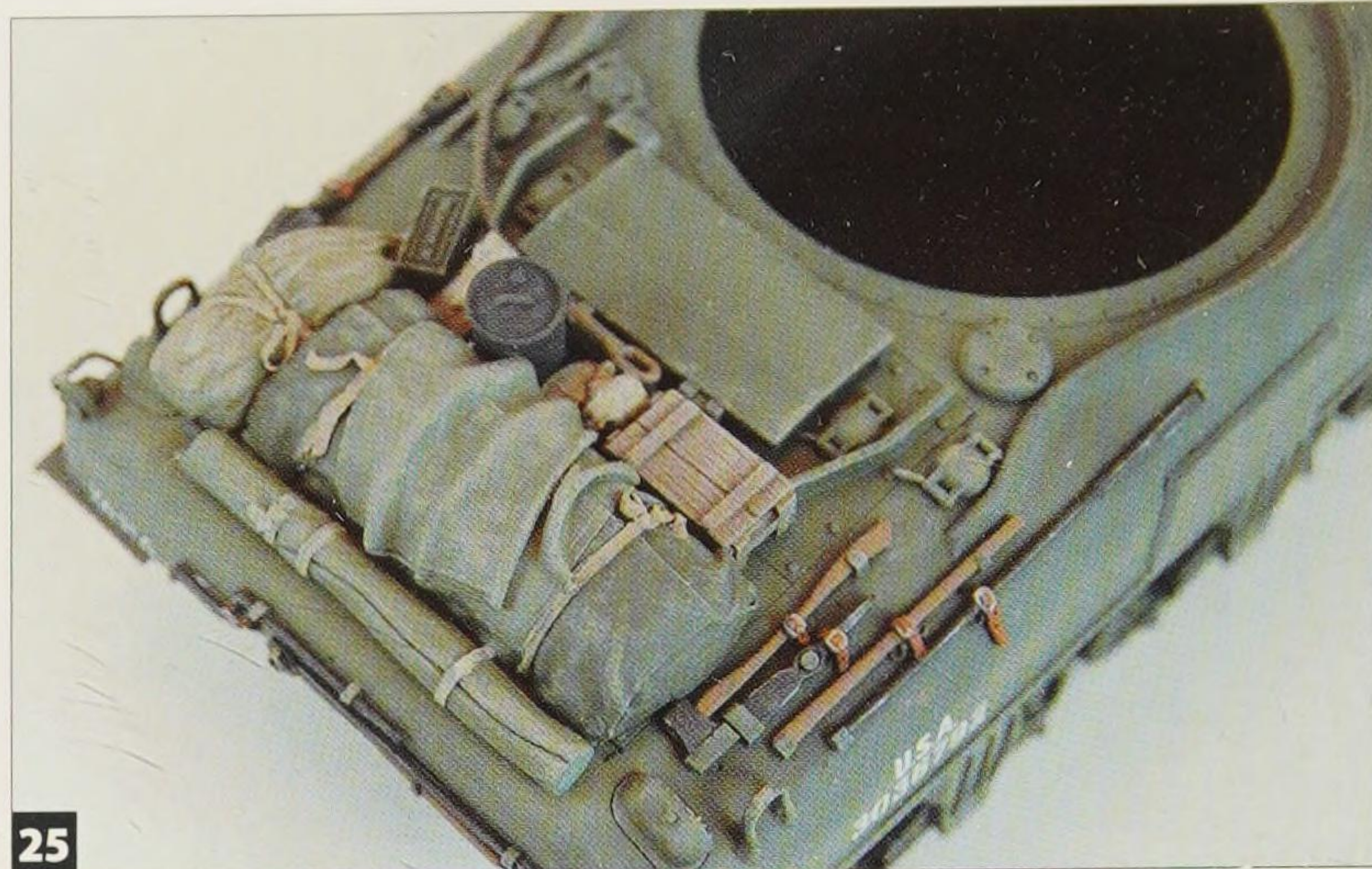
After the paint dries, I add the markings. I like to do it at this point so all future painting and weathering will affect the markings as well as the paint. I still like to spray gloss coat on the areas where I will place the decals to ensure I won't get "silvering" in the clear areas on the decals, which can happen on flat paint.

For this model I used the decals that came in the kit since they are pretty generic, and I'm not trying to model a specific Sherman. I do use a decal-setting



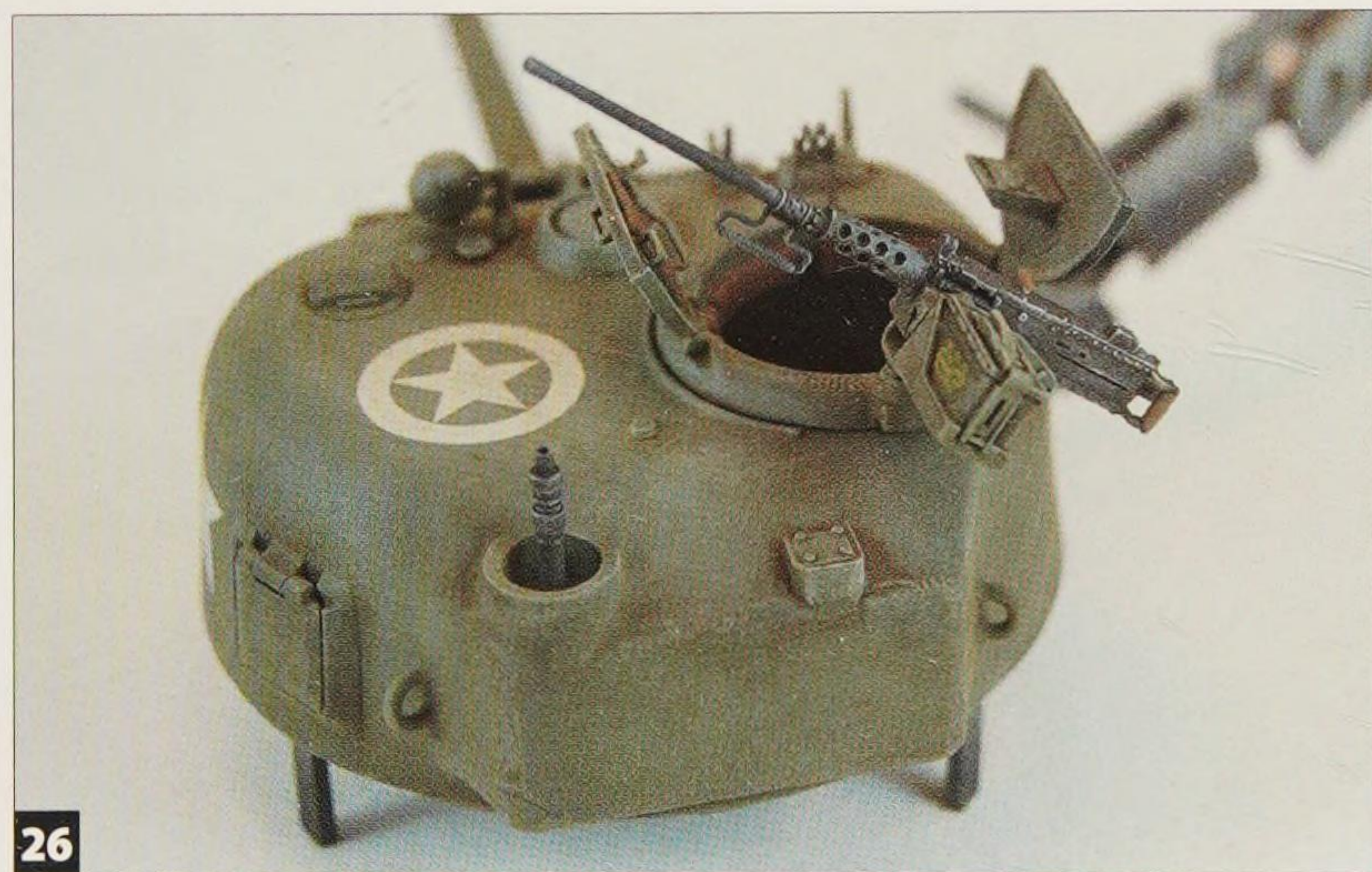
24

Dry-brushing, here with Afrika Dunkelgrau, is the process of dragging a wide, semi-dry brush over the high spots.



25

Olive Drab and Khaki—even several shades—go over the soft stowage. Then dry-brush all in Afrika Dunkelgrau.



26

The machine gun was painted in Gun Metal and dry-brushed with Metalizer Aluminum.



27

The next stage is applying an oil wash. As important as the choice of paint is the choice of thinner. Weaker is better.

agent called "Mr. Mark Softer," to help the decals conform to the surface completely. Once they are dry, I airbrush the entire model with Testors Dullcote to take care of any sheen from the gloss areas.

Dry-brushing. Blasphemy! Yes I am aware that dry-brushing is no longer in vogue, and I understand the issues that have been brought up about dry-brushing. I don't care; it works for me. Basically dry-brushing is a simple method of dragging a wide, flat brush having a tiny bit of a lighter color paint than the existing coat over the surface of the model, **24**. With so little paint (the brush is nearly dry, hence the name), only the high spots on the model pick up the new shade, and as a result, details like edges, bolt heads, and weld lines are highlighted.

But why highlight at all? Two main reasons have been articulated. One is that high spots look lighter because they're not in shadows. You can easily see this if you look at a photo of a tank in the sun-

shine. The other reason is to help your eye compensate for the small scale by exaggerating the difference between light and dark details. There's logic to both points.

So why then is dry-brushing out of style? Well, it seems that the issue many people have noted isn't so much the method of dry-brushing but rather the degree of contrast people have been using. On this point I will have to agree. I have certainly seen a number of models where the dry-brushed color is so many shades lighter than the basic color that it looks unnatural. However, that doesn't invalidate the concept of dry-brushing—it just suggests that a proper balance must be achieved.

So I made an important change to the way I incorporate this technique. Instead of dry-brushing near the end of the weathering process, I now do it right after I've applied the markings.

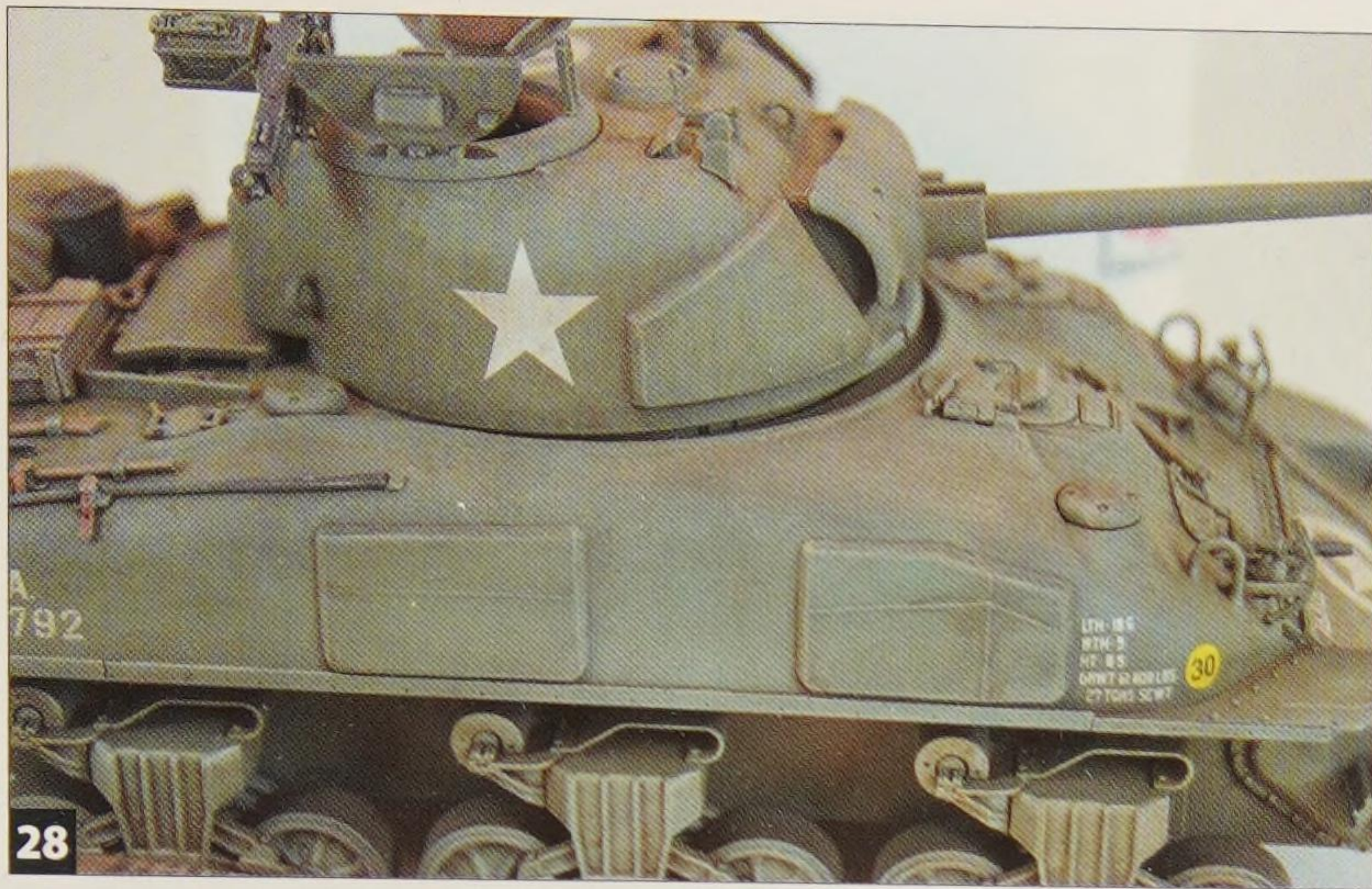
My logic is that I really want the other weathering steps to help integrate the dry-brushing with the rest of the painting

and thus achieve a blended look that is more appealing.

For a dark green tank I've come to really like a Model Master Enamel color called Afrika Dunkelgrau. It's a tan/gray mixture of about the right brightness to nicely complement a dark green or dark brown vehicle.

As I have described, I simply drag a wide brush across the model, making sure to hit the areas with noticeable edges and high spots. I also drag the brush right over the cast-surface areas, letting the dry-brushing pick up some casting texture highlights as well.

Detail painting. Prior to starting the weathering process, I paint all of the various details on the tank. I use a Model Master acrylic called US Army Helo Drab for the road wheels. I've found this dark gray/brown color to be a good representation of worn and dirty rubber. I'll confess that you can skip this step, since the weathering steps tend to blend out the distinction



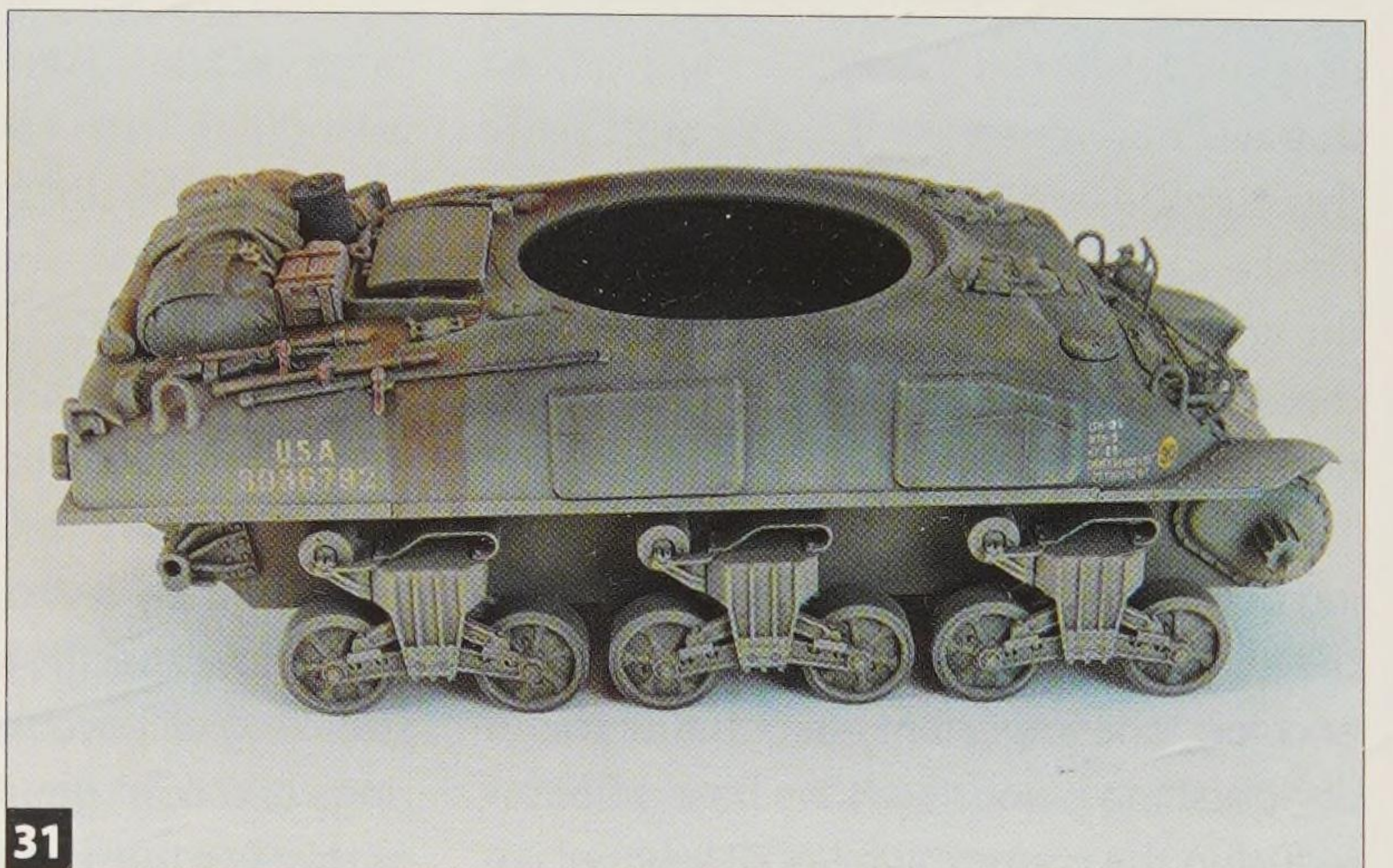
28 After the oil wash dries, it produces an effective and natural-looking blend of colors.



29 Some tasteful streaking adds a touch of reality. Look for places for fuel spills and other drip and wear patterns.



30 A mixture of Burnt Sienna and black mixed with 70 percent thinner makes a great fuel stain.



31 Use Tamiya Buff thinned about 80 percent to get a "dusted" look.

between the rubber and the metal parts of the wheels, especially on darker colored tanks.

I also painted the stowage at this time, **25**. Most of the soft packs are Olive Drab, Faded Olive drab, and Khakibraun. All of these colors are pretty close in tone, but having a little variation helps visually. They are all dry-brushed with a lightened version of Afrika Dunkelgrau. The straps on the packs are painted the same lightened Afrika Dunkelgrau. The wood box is painted in dark tan and the oil drum is black with a dry-brushing using dark gray.

The pioneer tools and .50-caliber MG metal parts are painted in Model Master Metalizer Gun Metal and dry-brushed with Model Master Metalizer Aluminum, **26**. The tow cable is painted in Model Master Raw Sienna and dry-brushed with Model Master Metalizer Dark Anodonic Gray. Raw Sienna is a good match for metal that is slightly corroded and a little rusty. The Dark Anodonic Gray is a good color for natural metal that isn't highly polished.

Oil wash. To be honest, I don't distinguish between painting and weathering. To me they're a series of steps toward the final appearance of the model. But for conversation purposes, I will say that weathering starts with the oil wash/filter.

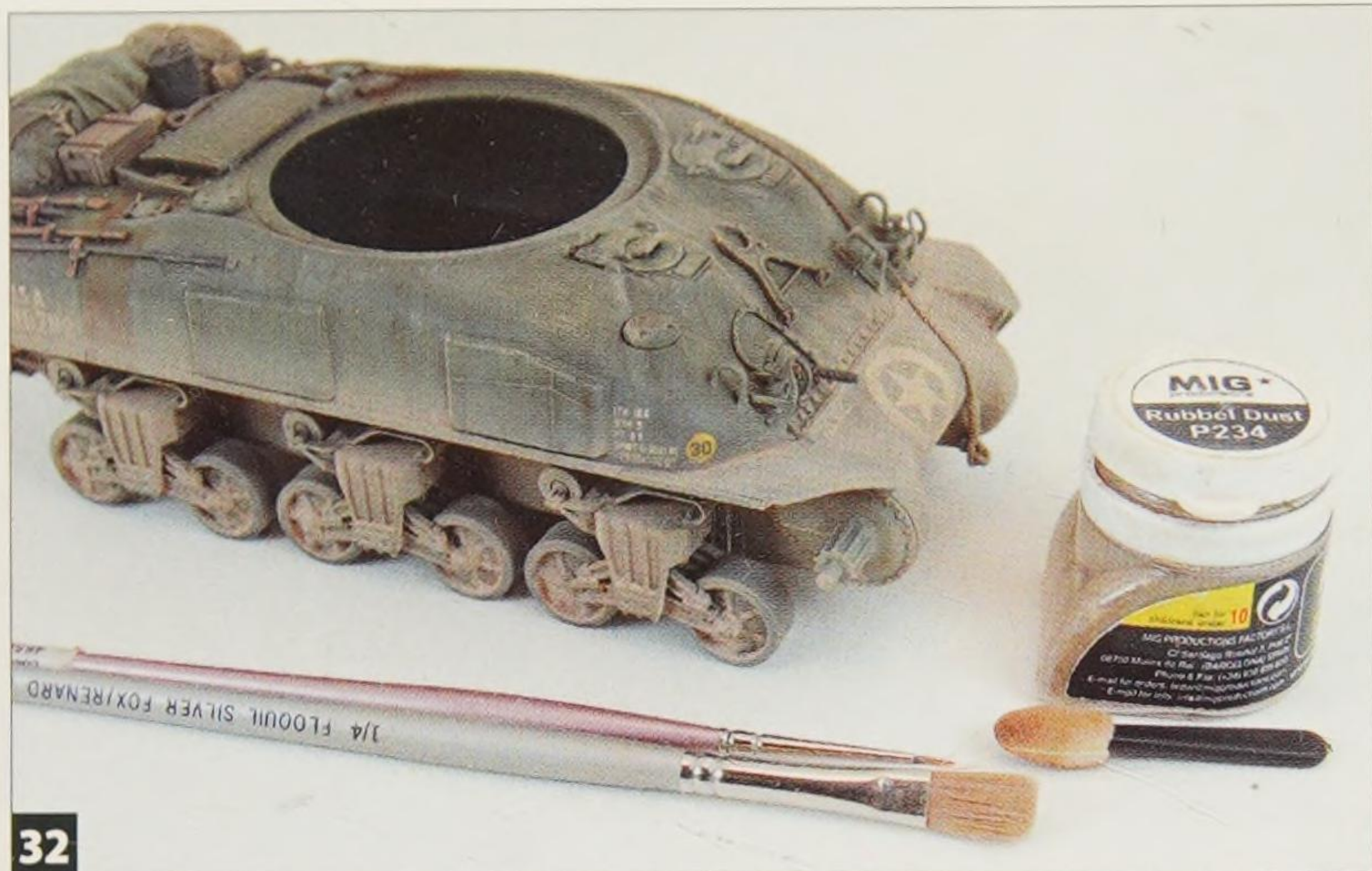
What's the difference between a wash and a filter? This may not be the most technically accurate description, but I think of a wash as something that is applied over a glossy surface with the intent of having it collect in the cracks and corners. I think of a filter as being applied over a flat surface with the intent of having the filter actually affect the base color of the paint.

Thankfully I don't need to understand it any better than that, and the methods I use integrate the two concepts into a single step anyway. In order to apply a wash/filter, I first flat coat the entire model yet again.

I use oil paints for my washes. I have no specific reason other than I like to mix them myself, and I've found the Windsor

Newton brand of oil paints mix nicely. The more important item is the thinner. In the United States, most art supply stores carry a brand called Mona Lisa and that line's product called Odorless Paint Thinner. This must be the weakest thinner I have ever used, which makes it perfect for this application, **27**. With weak thinner you can minimize the chances of the thinner affecting the base paint. To put it simply, you want methods and materials with little risk of ruining your paint job since the model is almost finished.

The oil paint color I really like for a wash/filter is Raw Umber, a dark brown/black color that complements nearly any color. To make the wash, I just squeeze out a little paint onto some disposable artist's paper (similar to wax paper) and start adding the thinner until I get a mixture about the consistency I want. I would guess I end up with about 20 percent paint and 80 percent thinner. I apply this over the entire model using a wide brush. I keep another brush handy to remove any



32 Apply pigments to the lower hull and suspension but don't overdo it.

excess that starts pooling too much since that will look unnatural. For the most part, this method would be called a filter but I make sure to let a little accumulate in the corners and cracks for a wash effect too. This is actually easier to do than to describe.

Once dry, the result is a pleasant blending of the colors on the model, **28**. Since the filter has a stronger impact on the lighter colors, one important effect is that the dry-brushing blends with the base color, reducing the contrast while still leaving highlighting. The other effect is to integrate all colors so items like the stowage and tools seem to blend more naturally to the model, and as a result, they look like they are supposed to be there.

For many modelers, this is it for weathering. But I like to do more, which may sound contradictory since I have described this as a simple and straightforward build. There are a couple of good reasons. First, I hope to show that these additional weathering steps are pretty simple processes for modelers of all skills and experience levels. Second, weathering is a tremendous way to bring a model to life regardless of the level of complexity and detail added to the model.

Streaking. So the next step in weathering is to add some streaks, **29**. Tanks get dirty, and often the result is some type of grime and dirt running down the model. Adding a few streaks is a great way to give the impression of a tank that's been operating in the field for some time.

Making streaks is really easy. I simply place a dot of oil paint at the top of where I want a streak and then dip a brush in the

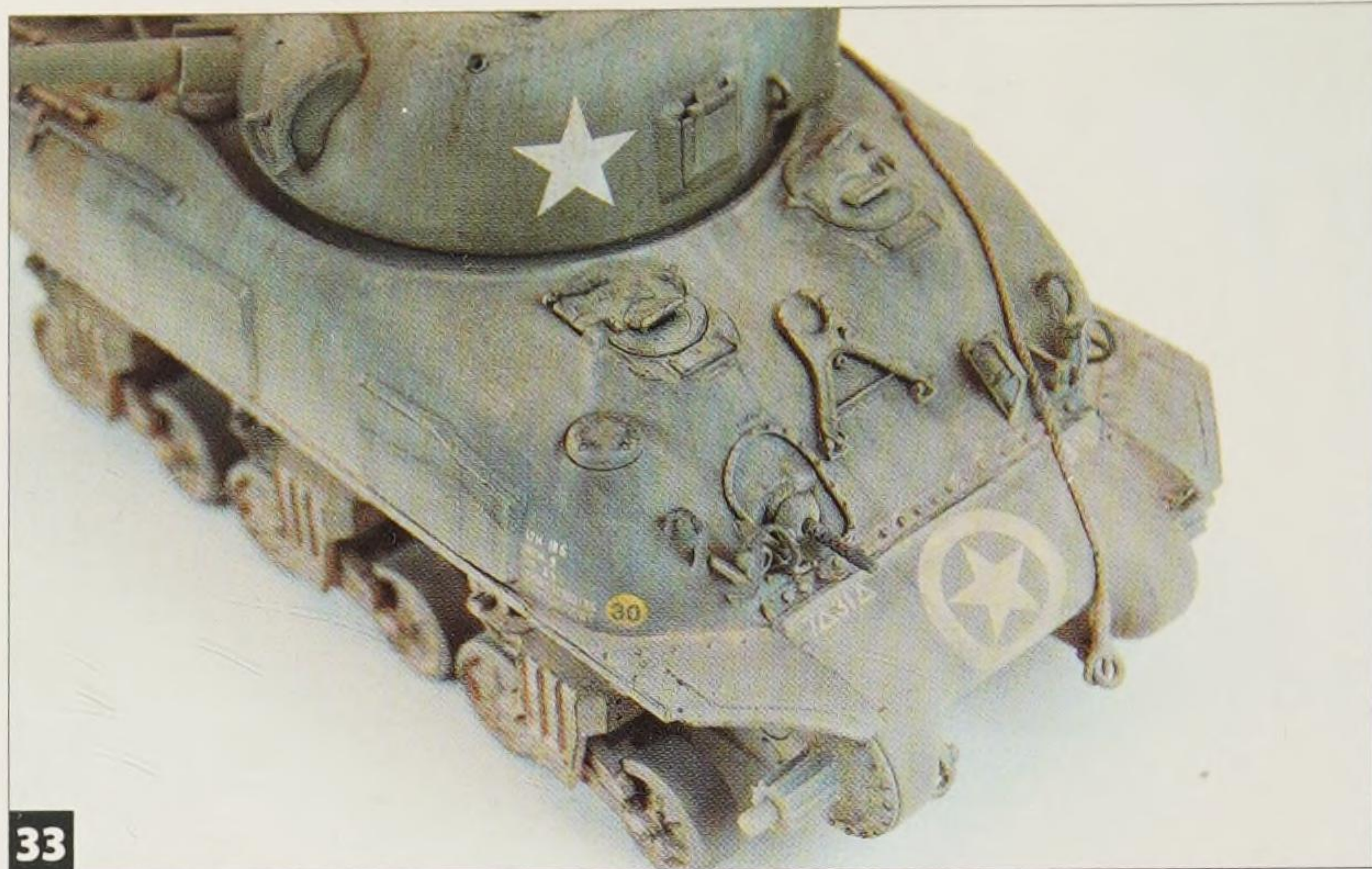
same Odorless Paint Thinner I used for the wash/filter. Then I drag the brush downward over the dot of oil paint and the result is a streak. You can make a longer streak by placing a larger dot and you can also remove too big of a streak by simply running the brush over the streaked area again.

I generally try to place dots for streaks just below specific places where I'm sure streaking will occur. Items like the lifting rings and light guards are good examples of this. For these streaks, I will again use Raw Umber oil paint.

Then I'll add some general streaking all around the model using a random series of dots consisting of white, tan, and Raw Umber paint.

Fuel stains. Adding some fuel stains is another nice way to give the impression of a war-weary tank. I mix a combination of Burnt Sienna and black oil paint, **30**, thin it to a ratio of about 30 percent paint to 70 percent thinner, and use a small brush to run it around the fuel caps. I try to avoid the caps themselves since they would normally be opened and therefore would not get covered in fuel that spills out. I finish the process by running the stains down the side of the tank where fuel would drip and drain. Some modelers add a little gloss to their mixture to simulate wet fuel, but I rarely do this. From what I can see, fuel tends to dry quickly and attract dust so in short order any sheen has flattened.

Dusting. High-quality color photos from the World War II period have been emerging recently, and one thing that you can't miss in them is that tanks are covered in



33 Reverse dry-brushing? Sure, it's a matter of darkening surfaces that would reveal wear such as spots where dust had rubbed off.

dirt and dust. But simulating a dusty tank can be a risky proposal, as many methods for "dusting" a model end up fading out all of the details you've just worked to add.

To prevent this, I've turned back to an old method that really works well. To give the model a good "dusting," I thin Tamiya acrylic Buff paint to a ratio of about 20 percent paint and 80 percent thinner, **31**, and airbrush it on the areas of the model that I want to look dusty. At first it seems like nothing is happening, but after about 10 to 15 passes the model starts to really change color and appear like it is getting, well ... dusty.

I apply this to the underside of the tank, the suspension, and up along the hull sides and rear hull. This gives the impression of the heavy dust build up from the tracks and the key is to have a continuous gradation up along the upper hull and the transmission cover.

Pigments. I love the results of working with pigments, but I've learned it's one area where less is more. Pigments are basically powdered paint with some adhesive added so when you apply them, their effect is very strong. I only use pigments dry because I want them to have that random, dusty look.

I use them in two ways. For most of the lower hull and suspension, I use a big brush to cake the pigments all over that area, **32**. To simulate a tank operating in Northwest Europe, I use a mixture of three MIG Pigments products: Rubbel Dust, European Dust, and Light Dust.

Once I've got it on the area, I go back with my thumb and an eyeliner sponge to remove the loose stuff. The result is a bit of a



34 An easy way to paint the rubber pads is to “drive” the track over a stripe of black paint. Just gently roll it along to coat the surface.



35 Oil wash, followed by some pigments blends things. Touch up the extenders by dry-brushing with Dark Anodonic Gray.



36 The Tasca figure is well done. With the exception of the face, the paint process is like painting the stowage.



37 The flesh color here is Model Master Wood highlighted with Tan. A Raw Umber wash brings out the details.

washed-out but dusty look. On other areas that aren’t so dusty, I use a small brush and simply rub the pigments into cracks and corners. It gives the impression of dust build up without the washed-out effect.

Reverse dry-brushing. Hey, I had to come up with at least one new term, right? My contribution is “reverse dry-brushing.” It’s really nothing more than dry-brushing with a darker color than the base coat, **33**. In fact, I just use flat black. Why? Well, this method simulates the wear that occurs as people climb over the tank and as gear is dragged and rubbed over the edges of a painted surface. It also simulates wear on the built-up dirt, which would expose the paint underneath it.

I use this method instead of paint chipping. Other than in very specific circumstances, I don’t apply paint chipping to my armor models. Although chipped paint looks cool, the photos I’ve researched don’t reveal much chipped paint. However, I do see a lot of wearing and rubbing, and for that I apply reverse dry-brushing.

The only trick is to try to apply the effect randomly since rubbing and wearing doesn’t seem to occur uniformly. It’s also worth noting that this method works



38 Hardware store paint is durable and tough. Run a black marker over the edge of the base. Use a flat coat to kill any gloss.

great right over the pigments, so you can use this method on the whole model.

I try to go a little heavier on areas of heavy use such as on hatches and areas where the crew would walk. I also apply more reverse dry-brushing on the areas where I’ve used pigments because the effect helps to bring out the details again.

Painting the tracks. I can’t believe how much effort I once put into painting tracks. Somewhere along the way, I realized that there is an easier way. Now I start by painting the tracks in Model Master Raw Sienna, which is a good representation of rusty and dirty metal. For the tracks on this Sherman, you also have to paint the rubber pads both inside and outside of the tracks. I used the same color as the rubber on the road wheels, US Army Helo Drab.

There’s a shortcut for painting the chevrons on the outside of the tracks, **34**. The whole pad is rubber, but you only need to paint the chevron to simulate rubber because the rest would quickly be covered in dirt and can be left in Raw Sienna. The trick is to paint a stripe of US Army Helo Drab on some artist paper (the same stuff I used when making the wash) and then just roll the tracks along the stripe while the paint is still wet. It’s not perfect, but after



39 For groundwork, see the special glue formula below that I use to adhere—you guessed it—dirt!

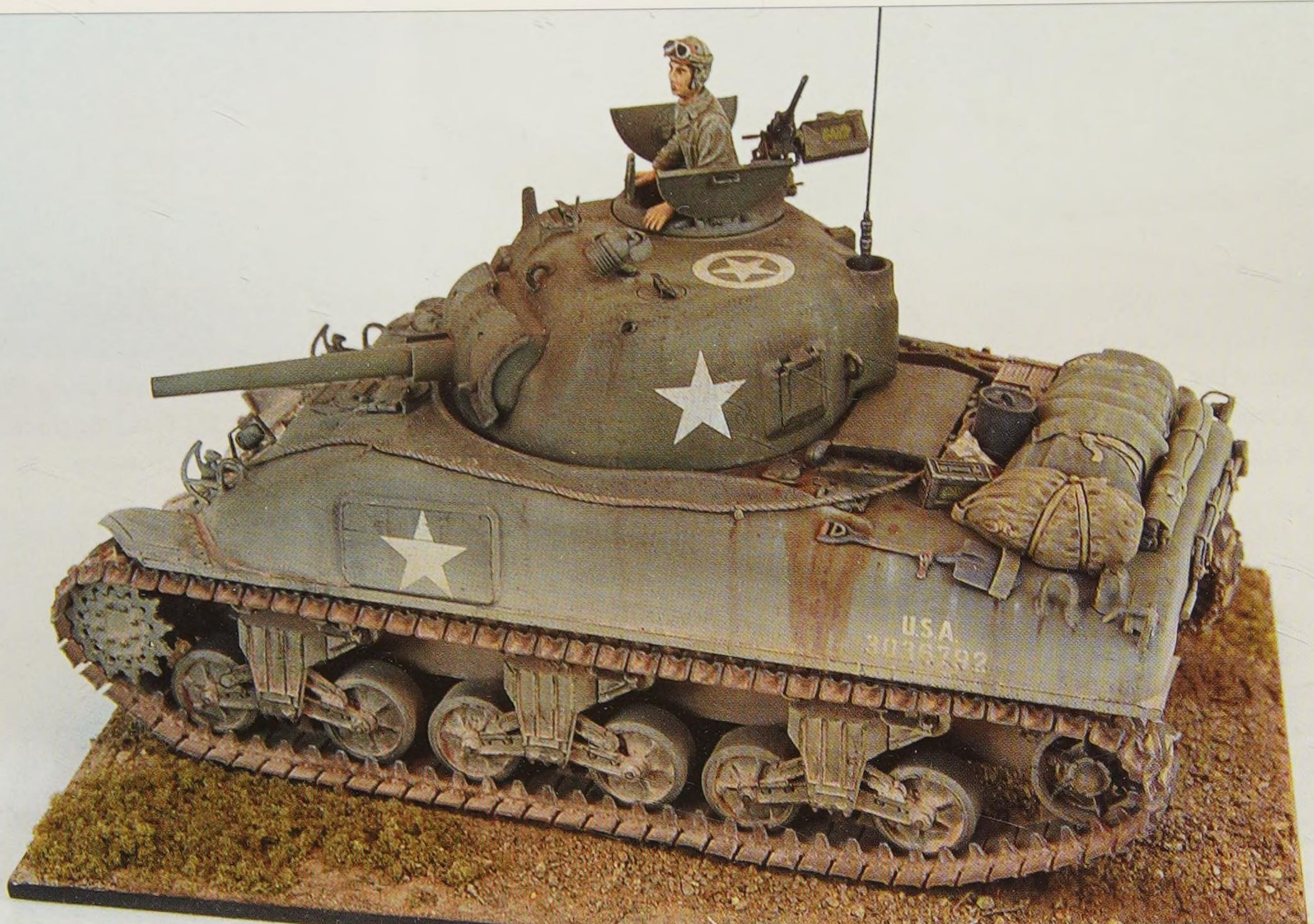
the weathering, any small imperfections won’t be noticeable, and you can finish the tracks in just a few minutes.

After painting the pads, I give the tracks an oil wash using the same wash I already used on the model, **35**. Usually I make sure to have the tracks ready so I can use the same batch of wash.

Once the tracks are dry, I give them a flat coat and then cover them in the same pigments as the rest of the model. Just as with the wash, I do the pigments on the tracks at the same time I’m applying them to the tank. I then rub off the pigments with my thumb.

Finally, I dry-brush the end connectors and the duckbills with Model Master Metalizer Dark Anodonic Gray, and the tracks are finished. You can also go back and dry-brush with Aluminum if you want to represent tracks with a little more recent wear.

Yes, it really is that simple. Attaching the tracks to the tank is easy. Just slip them over the sprockets and around the wheels and the idlers. Tasca’s idlers are mounted on a cam, so when you rotate them, they actually swing back and forth. This is a useful feature that allows you to adjust the track tension to the right level. You can’t find a simpler way to mount tracks.



This is a nearly straight-from-the-box modeling project, improved with a few aftermarket parts and careful attention to simple painting and weathering techniques.

The tank commander. Tasca provides a pretty well-done tank commander figure, **36**, so I decided to use it.

For the most part, the process of figure painting is like painting the stowage. The base color is Model Master Faded Olive Drab. The difference is the skin, and for that, I used Model Master Wood as a base color with highlights of Model Master Tan. I placed a small dot of dark brown for each eye and also for the eyebrows. Then I gave the whole figure a wash/filter again using the same thinned Raw Umber as on the tank.

On the face I used a small brush and made a point of running the wash along the facial lines for extra definition, **37**. With the figure done, the tank can now be completed.

Making a simple base. When I first started making armor models, I stated quite definitively that I would not add figures or make groundwork because I didn't think I could ever do them well enough to complement my models. My wife still teases me about this pronouncement, because now I always put my models on some type of ground work. I think it provides context and

helps to make sense of the weathering. While I do love to make dioramas, sometimes I just want to make a simple base, as in this case.

Here, I have used 1/8"-thick sheet styrene. I order it straight from Plastruct's website. A nice advantage of working with styrene for this is that you don't have to turn to woodworking tools—all of the normal modeling glues, tools, and skills can be used.

For this model, I determined the basic size I wanted and cut it from the sheet with a standard handsaw. Cleaning up the edges was easy because the styrene is soft. I simply used 220-grit sandpaper to smooth the edges.

Styrene is non-porous and non-absorbent, so I cut a hatched pattern in the top surface with a motor tool to help the groundwork to stick and not pop off once dry.

Then I painted the base with hardware store, spray can Flat Brown, **38**. The paint is cheaper and tougher than modeling paint so it's perfect for this use. I made the black edges using a large marker, and once it all dried, I gave the base a couple of clear flat coats from a spray can.

For the ground texture I've found that nothing looks more like dirt than dirt, **39**. So I get some from my yard, sift out the chunky stuff, and let it dry. In order to get it to adhere to the base, I mix in a wall repair product called Presto Patch. This stuff looks a lot like plaster of Paris but dries rock hard. I add some Woodland Scenics Scenic Cement, a big shot of white glue, a little acrylic black paint and then some water. I keep adding water until the mix reaches the consistency of chocolate pudding, and then I spread this goop on the base.

On the top, I sprinkle some more dirt and also some greenery, which is another Woodland Scenics product. While the base is still wet, I press the tank into it to make the track impressions, then pull it off before it gets stuck in place. Once the base is dry, a little oil wash accents the track impressions. I then mount the tank using white glue in case I need to get it off later.

And that completes this build, **40**. As armor modeling goes, it doesn't get much more straightforward than this. It's within the reach of anyone, and for those with a little experience already, such a simple project can be a real joy.

AFTERMARKET PARTS simplify a complex kit

Israeli M51 Sherman for the 1967 Six-Day War

The M51 is considered by many to be the ultimate Sherman. Featuring a 105mm cannon, the M51 was capable of defeating tanks 20 years newer, including the Soviet T-55 and T-62.

The M51 was developed when Israel realized that its existing fleet of M1s (M4A1s or M4A3s with a French 76mm cannon—and according to Tom Gannon in *The Israeli Way*, the only Sherman properly called the Super Sherman) was losing combat effectiveness.



Dragon's M51 comes in the company's Premium Line. It's a great start, but aftermarket upgrades like these from Tiger Models can really improve this kit.

2



The M51's 105mm cannon and the turret counterweight it required tell you this was the big Sherman. Dragon's model is also a bigger challenge because it's an updated version of an older kit, requiring a step up in skills from the Tasca M4A1.

So for this build-up I chose the Israeli M51 Sherman used during the 1967 Six-Day War. You really don't need a reason—just look at it! That's one mean-looking machine.

Had it been in the U.S. arsenal, the M1 Super Sherman would have carried a designation of M4A1(76) HVSS or M4A1E8 and probably would still have used the World War II-era U.S. 76mm M1 cannon. The Israelis had recently completed a successful program to re-gun their fleet of 75mm equipped Shermans with a long-barrel French 75mm cannon, creating the M50. So something similar for the M1 fleet made sense. But they went further and changed to a 105mm cannon with a much longer barrel.

Like the M50, the M51 needed a heavy turret extension on the back to counterbalance the large cannon so the turret could rotate properly. The gun also needed a large muzzle brake to keep the recoil to an acceptable level, so the gun could be fired without worry of knocking the tank over. In addition to the gun change, the Israelis were also in the process of replacing the World War II-era engines on their whole Sherman fleet with a then-

modern Cummins diesel engine. Thus, in the early 1960s the M51 was born.

The M51 would have quite an illustrious career. Israeli Centurions and M51s would be the backbone of the IDF tank corps during the Six-Day War in June 1967. In the 1973 Yom Kippur War, the M51 was again called to action to provide crucial armor support, particularly in the desperate fighting on the Golan Heights.

It would stay in the IDF's reserves into the 1990s, and some would eventually be sold to Chile, where they would remain in service almost to the turn of the century. Thus the M51 turns out to be one of the longest-serving variants of the Sherman.

From a modeling perspective, the M51 represents a step up in difficulty compared to the M4A1 in the first chapter. This is mainly because the tank itself has more elements. The wider-track HVSS suspension is more complex, and now the Sherman has side fenders as well. The Israelis added all kinds of stowage racks, most notably the seven water-can holders, adding even more things to build onto the model.

Finally, unlike the newly produced Tasca M4A1 in the last chapter, Dragon's

M51 is an updated (called Premium) kit based on the company's original release, which dates back to the 1990s. So the M51 involves more construction work, and I chose it as the next challenge after the relatively simple construction of the M4A1. It is also a good subject to show how the use of some aftermarket items can actually simplify a complex build-up.

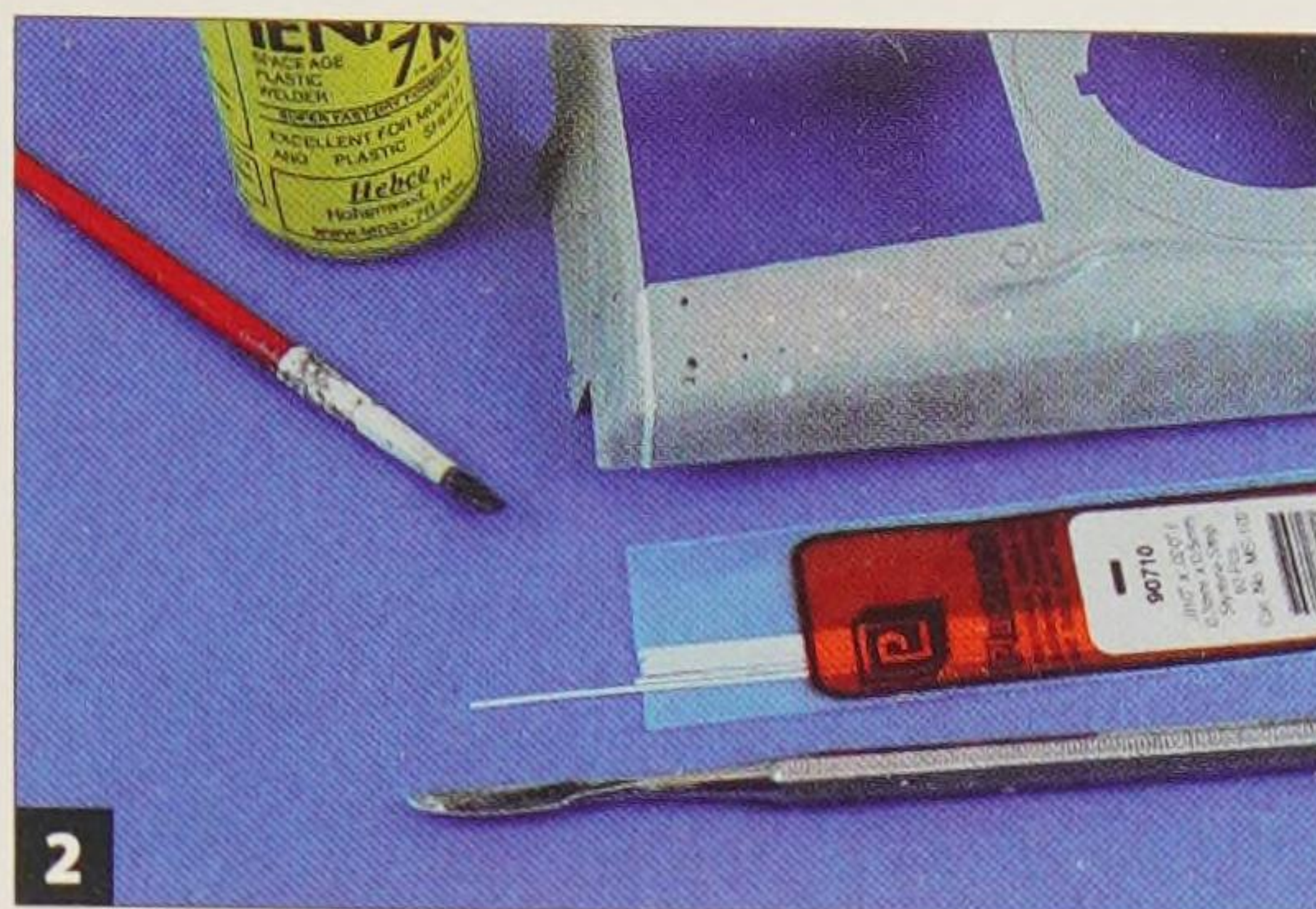
Getting started. The idea behind Dragon's Premium line was to refurbish some of the company's old kits with updated plastic parts, metal barrels, and extensive photoetched replacement parts.

Really, you get "aftermarket in the box." From a cost perspective, these kits can't be beat, and this alone makes it a great idea on Dragon's part.

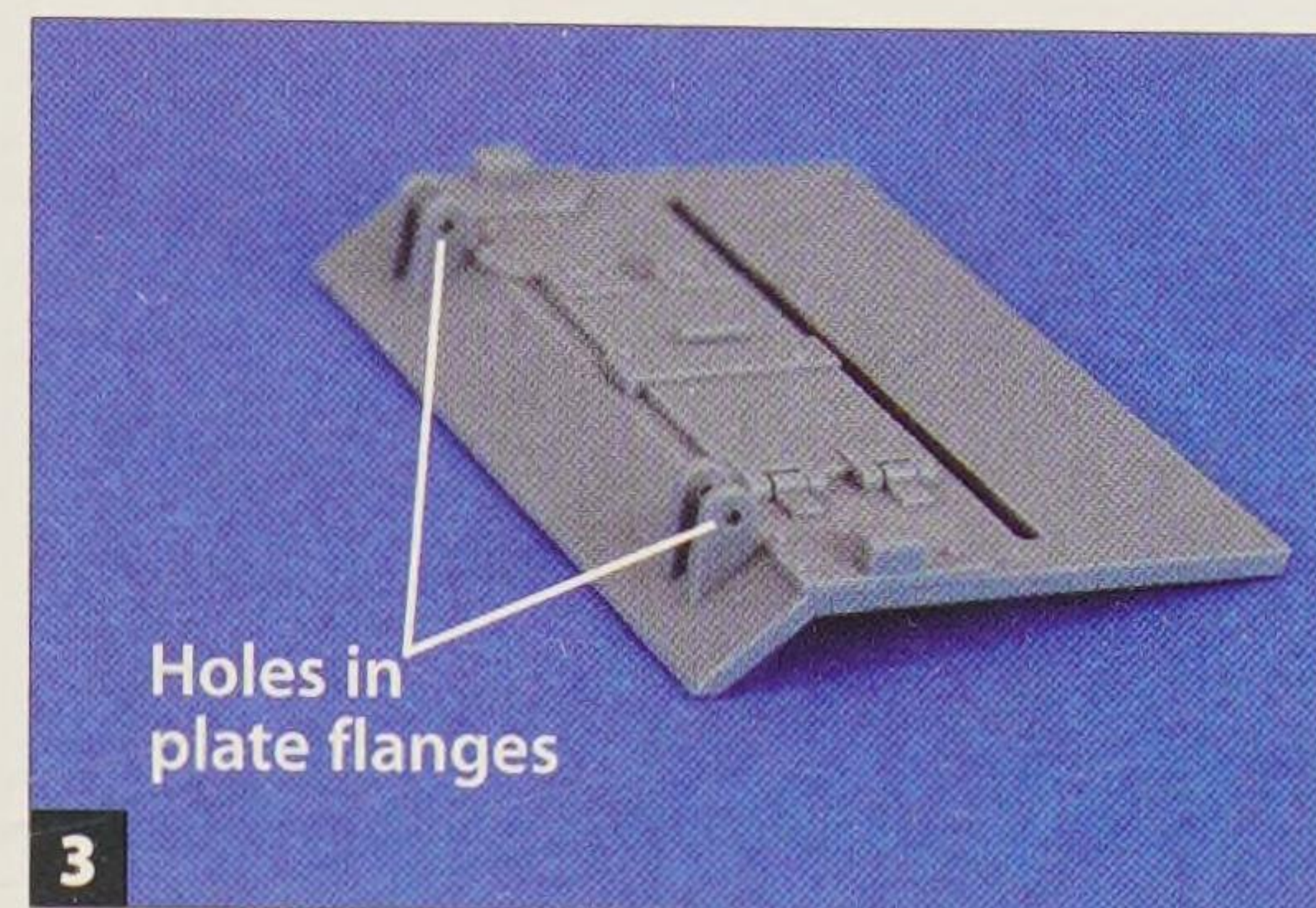
For the M51, Dragon has made many changes to the plastic. The most notable is that the entire lower hull and suspension have been replaced with the newer designs from the company's M4A3(105) HVSS kit. If you are a real stickler for detail, then this becomes a problem since the M4A3 hull bottom is different from the M4A1 hull, from which this M51 is derived. Personally, I don't really care since the only



Fill the holes provided for mounting pioneer tools. We'll add our own later, and the holes won't match.



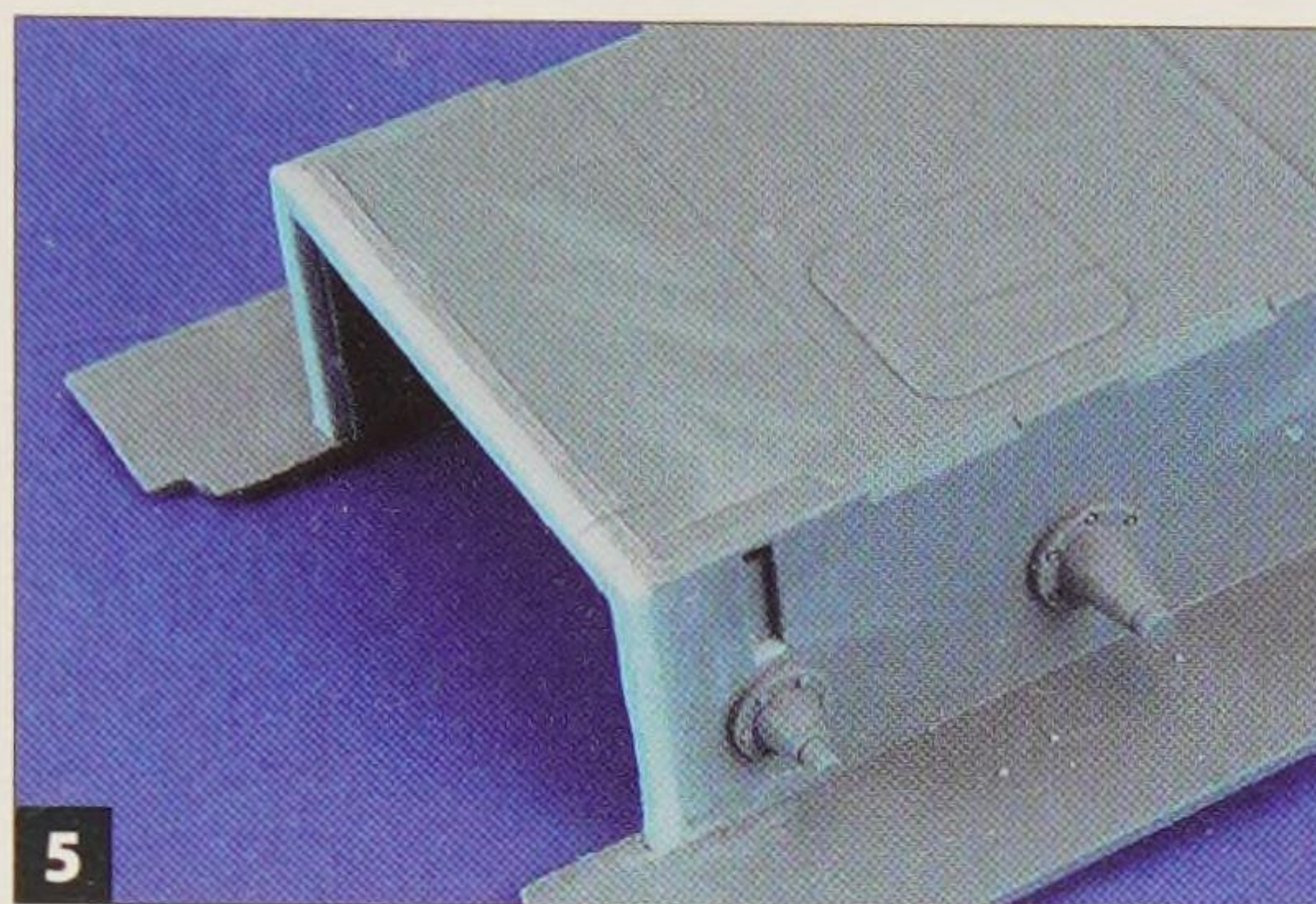
My weld line technique uses fine plastic strip softened with Tenax liquid cement.



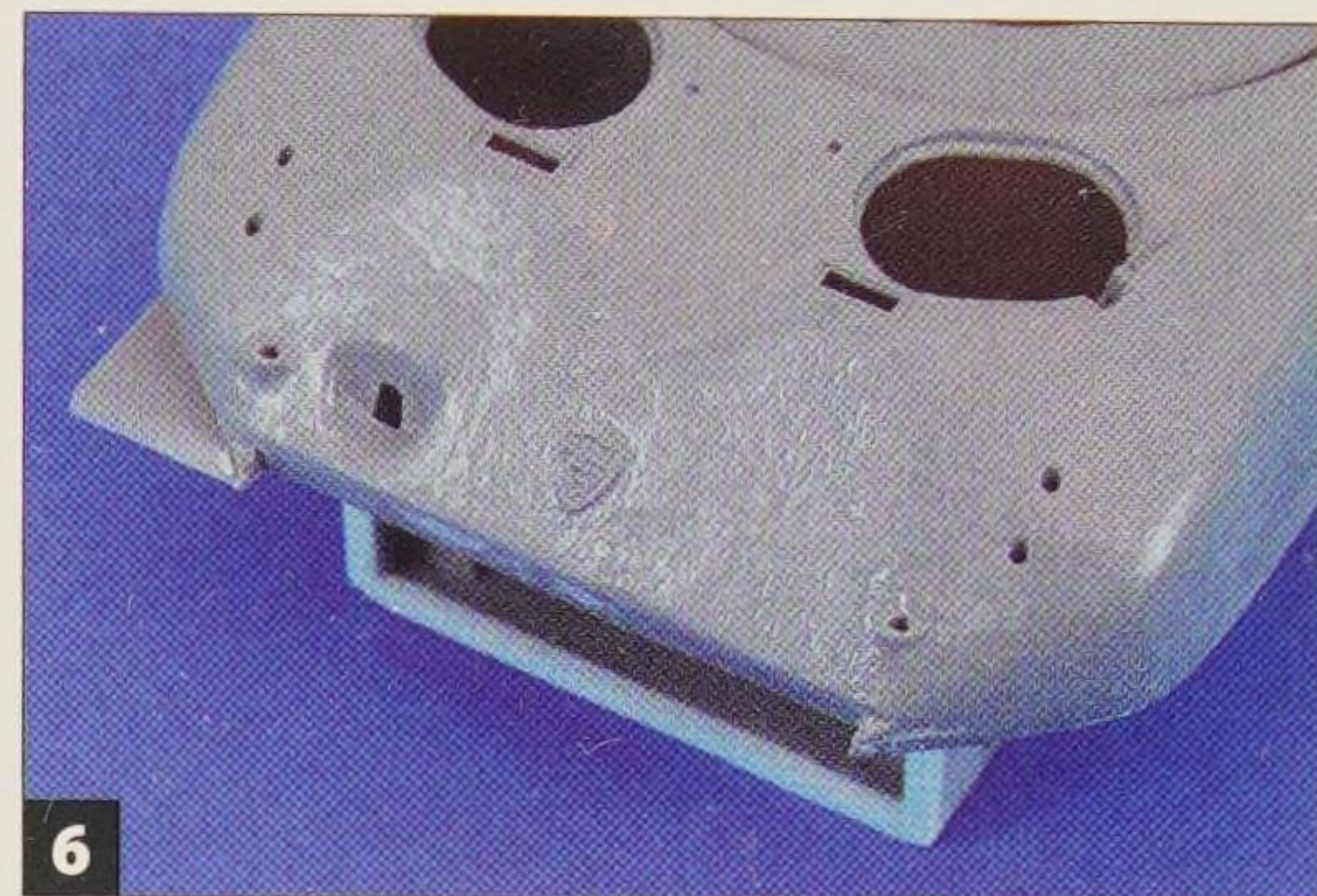
It's much easier to drill holes in the rear plate flanges now rather than after its installation.



Removing the transmission cover sides molded into the stock lower hull readies it for Tiger Models' cover.



The final step on the lower hull is extending it with styrene strips for a proper fit.



Clip off the portion of the sponson corner, which looks too much like part of the fender.

differences are on the bottom of the hull and you can't see them once the model is mounted on the base.

Dragon also includes updated hatches and cupolas from its newer Sherman kits, so you really get the most recent stuff.

That said, I'm still going to use a number of aftermarket items to further add detail and, in a couple of places, to fix a few construction issues.

Construction. In the build-up of the M4A1(75), I decided to add more casting texture because I felt Tasca's representation was too light. This model has the opposite problem. The texture is way too heavy and must be reduced. It's interesting to note that the two M51 kits available in 1/35 scale both have too much casting texture. It seems that the problem can be traced to the M51 now on display in Israel's armor museum at Latrun. That particular M51 appears to have unusually heavy casting texture. But it doesn't make sense since all of the cast-hull M51s started out as US M4A1s, and their casting texture would be about the same as the M4A1 in the first build-up. The Israelis didn't go back and add texture!

One suggested answer to this dilemma is that the tank at the museum has been

repainted many times, and each time the surface acquired more bumps and dips, which give the impression of greater texturing. So to be accurate, you really need to reduce the texture back to about the same as the M4A1 in the last project. Fortunately, it's just about as easy to remove texture as it was to add it.

But first, I glued the rear section of the upper hull to the front section. The Israelis added a long extension to the rear hull when they changed the engine, so Dragon had to make the rear section as a separate part. The back piece attaches to the front along a weld line and at the rear of the engine deck plate. The fit is only OK, and since I'll be retexturing the whole hull, I didn't worry too much that some serious sanding and putty work is needed.

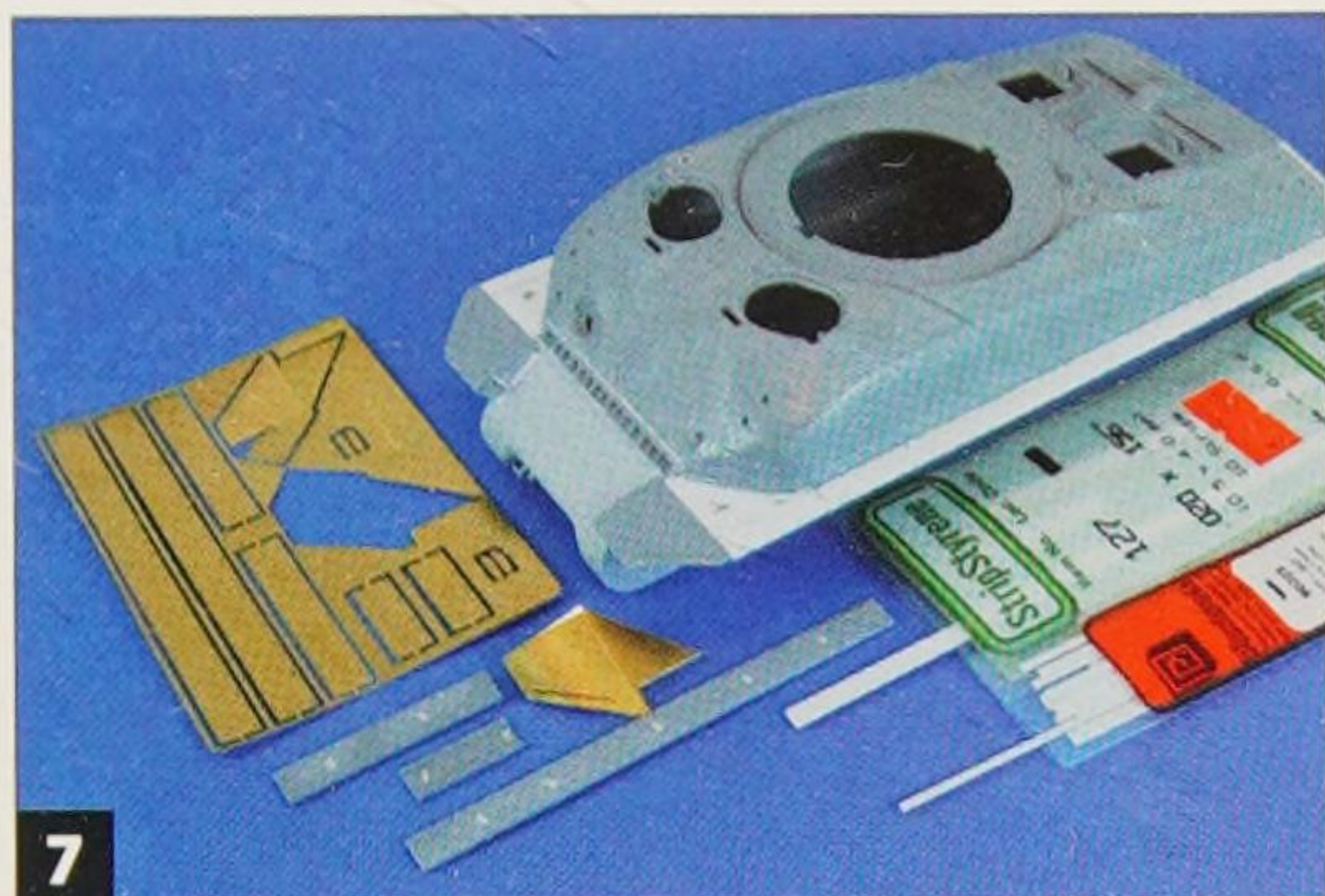
I also decided to fill all of the holes in the hull with some plastic rod, **1**. These holes are for the pins on the pioneer tools, but I recommend filling them and gluing on the tools later. Having any type of hole in the hull can look quite odd in the finished model. Lastly, I shaved off the small ring that goes around the bow machine gun. This part has a number of snaps and is intended to let a cover be placed over the machine gun when it's not in use. The Dragon representation is generic, and it

just so happens that there is nice spare in the Tasca M4A1 I built in the last chapter. So it is an easy upgrade, and removing the ring actually makes retexturing a little easier.

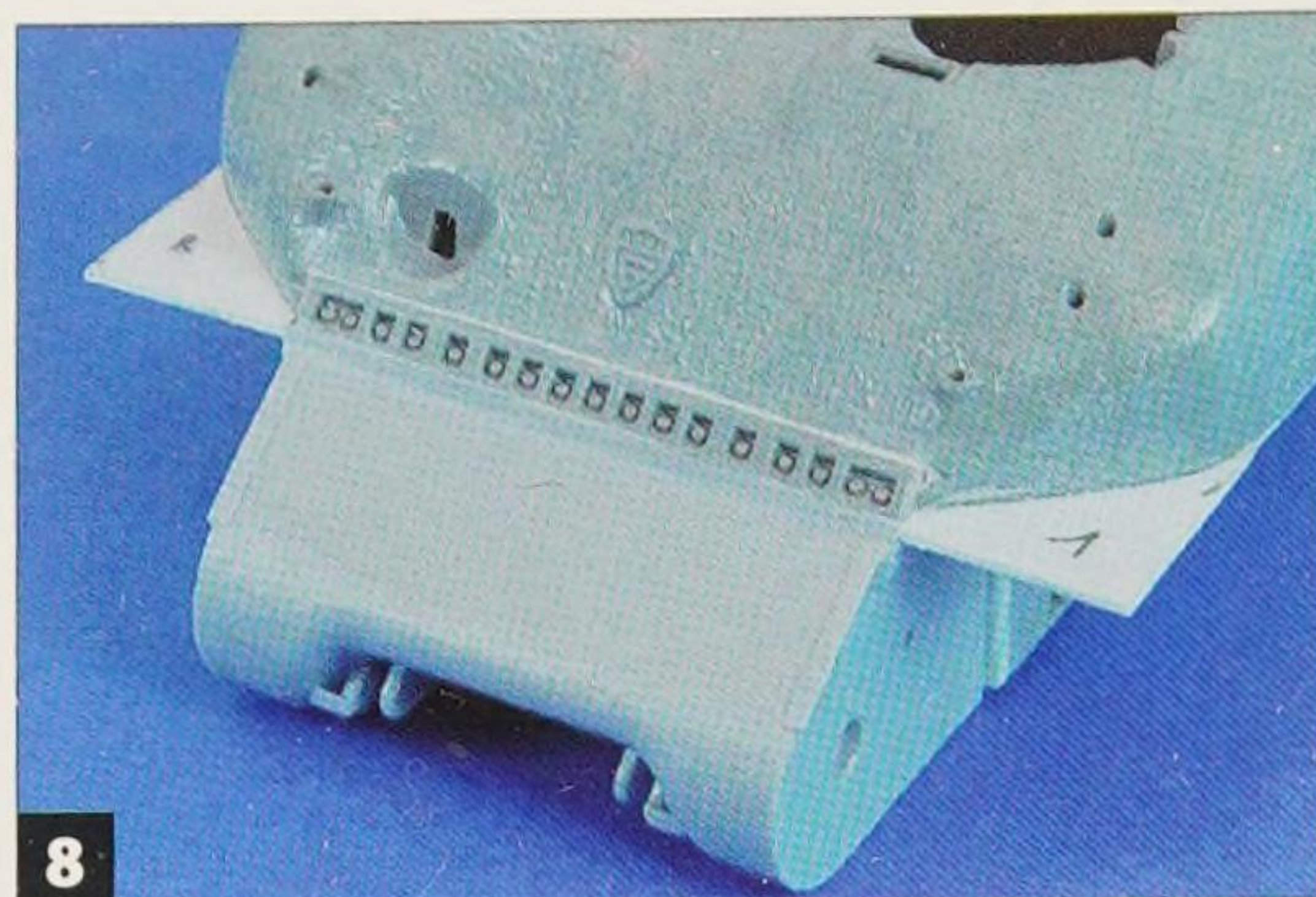
After I'd filled all these holes and gaps, I took out some 220-grit sandpaper and started sanding on the hull. I didn't get the hull perfectly smooth since the texturing method I used in the last chapter can cover some small dips and bumps. Then I used the same texturing method with Tenax that I used in the last chapter to get the hull to the same level of texture.

Once it was dry, I replaced the weld seam that runs from the back of the rear deck to the side of the hull. But why is it there at all? The original hulls when cast in the U.S. didn't have this weld. As with many upgrades on the Israeli M51, there is some confusion. There's no doubt you can see this weld line on the M51 at the Latrun tank museum. Tom Gannon speculates that this weld involved changing the angle of the rear plate to make more room for the new diesel engine.

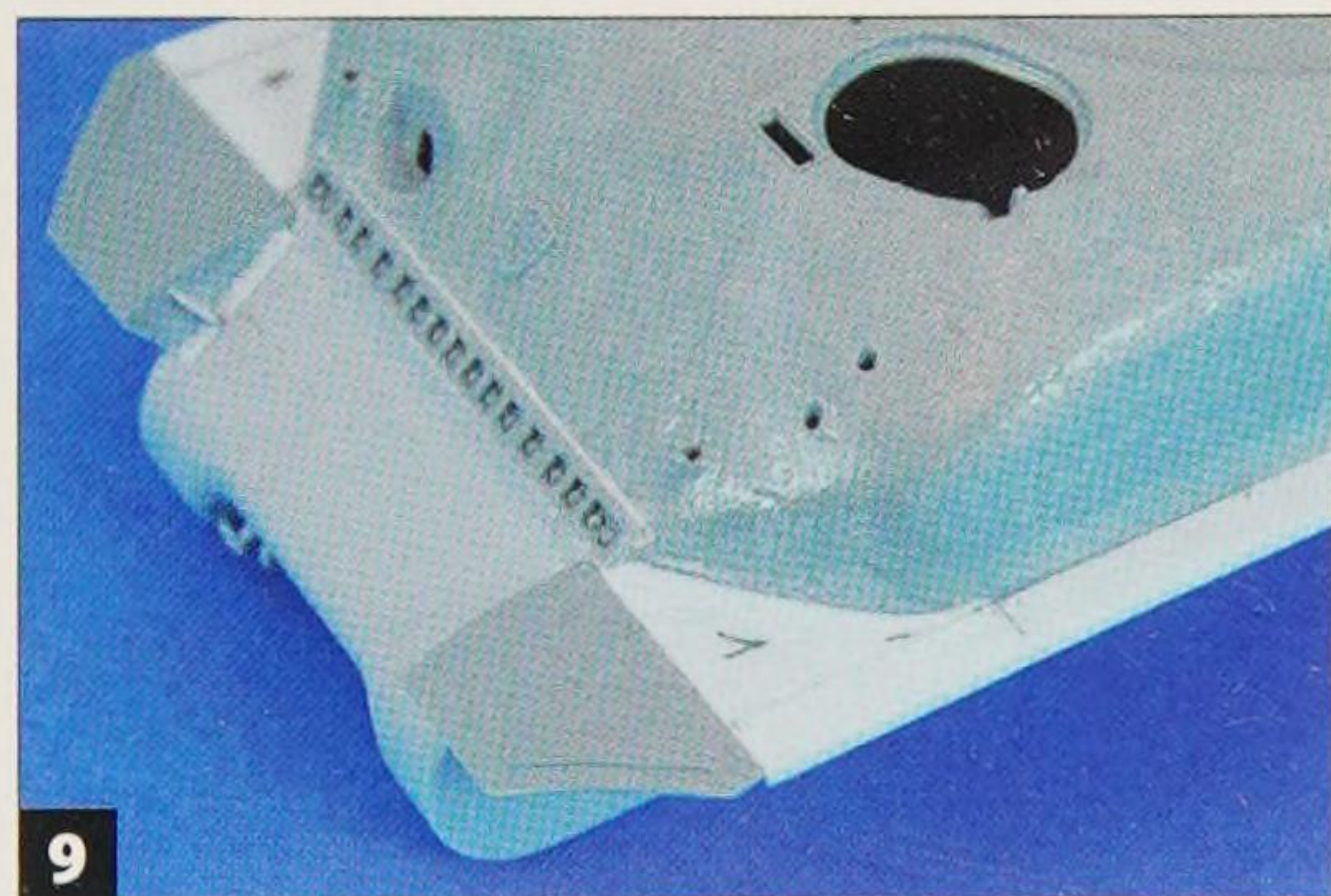
Could be, but walkaround photos of more-recent M51s don't show this modification. So it's unclear if this was done to all the M51s, to some of them, or possibly, just to this one to solve a unique problem.



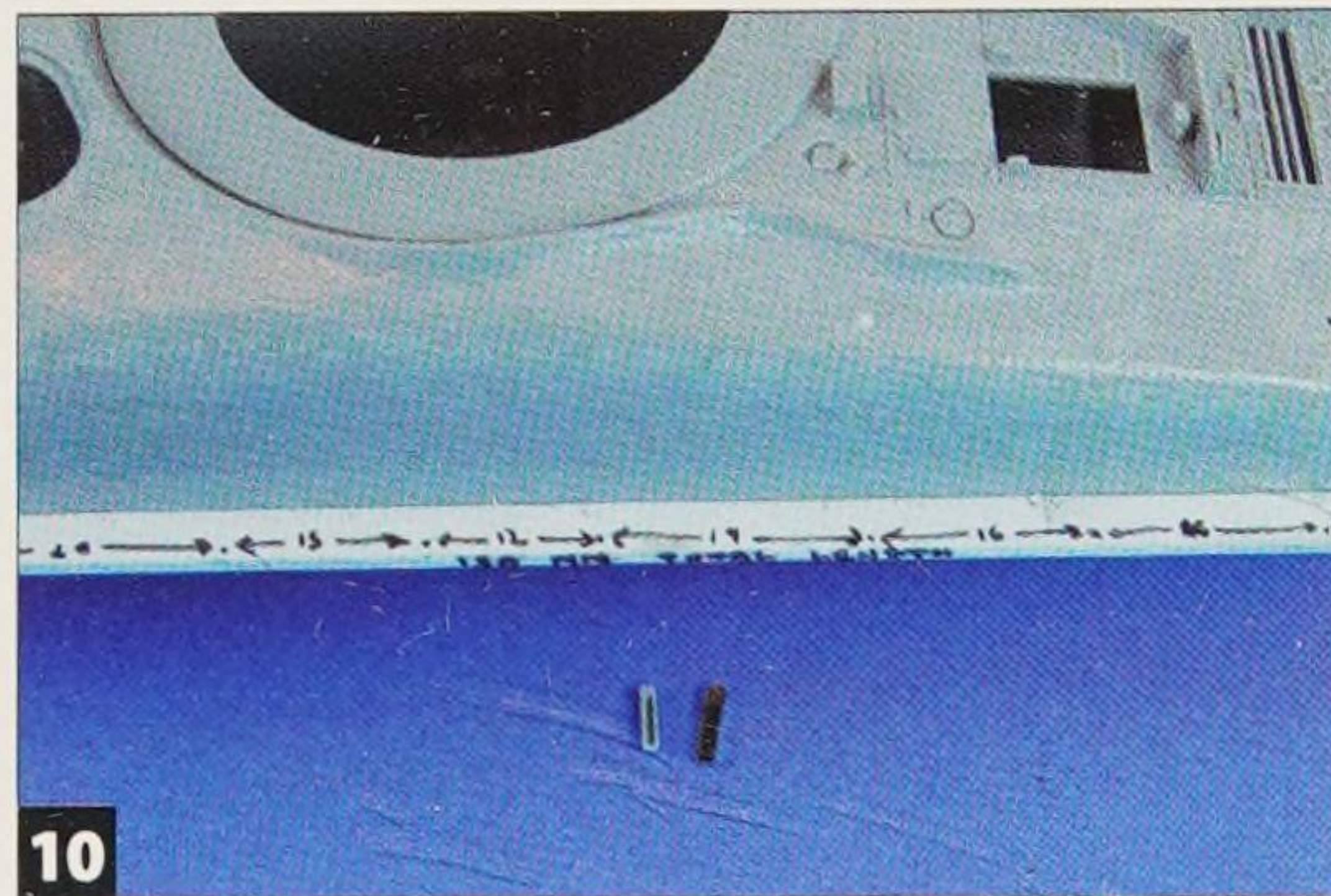
7 The kit includes both plastic and photoetched metal front fender extensions.



8 You can use photoetched front fenders, but styrene works well in this case and replaces that sponson part in photo 6.



9 The thin plastic version looks convincing to me and avoids the weak photoetched-metal-to-plastic bonds.



10 Making side fenders is technically scratch-building, but it just takes careful measurement and gluing of strip plastic.

I don't know, but I decided to add the weld back on since it looks cool, and I can demonstrate a simple welding technique.

The technique I use for adding welds is a simple one, **2**. First I lightly glue a small strip of plastic, in this case .010" x .020", along the area where I want a weld line. Then I paint it with Tenax liquid glue a few times until the plastic softens. Once it's soft, I use a putty knife to press in cross ridges along the whole weld line. I let this dry and then gave it a light sanding. The result is a pretty good representation of a weld line, and since it's all plastic, it's as tough as the rest of the part.

With the upper hull reworked, I turned to the lower hull. This is a more traditional tub design so all that you must do is attach the rear hull plate. But before doing that, drill holes in the four flanges that stick out of the rear plate, since it's much harder to do so once the plate is mounted, **3**.

The fit of the upper and lower parts is pretty good, but when I went to attach the transmission cover, I ran into a major problem. The lower hull was too short and the cover wouldn't fit! Thankfully the fix isn't hard. I had already planned to use the Tiger Model Designs replacement transmission cover, **4**, since it is beautifully

textured with nice casting numbers and details. The Dragon version has the same casting problem as the upper hull, so I saved a few steps by using a resin replacement part.

The two side walls of the transmission cover are molded into the Dragon lower hull, so you have to remove them to use the replacement part. But if you were to stick with the Dragon transmission cover, then the only good fix for the fit problem is to remove the side walls anyway. I just scored along the step between the hull and the side walls until they came off cleanly. This was pretty simple, since Dragon's plastic is pretty soft.

In order to get either transmission cover to fit correctly, you must add a lower hull extension of about .060"—a pretty large extension. But doing this is relatively simple. I bought some .060" x .125" strips and cut three pieces to match the hull side and bottom lengths, **5**. These strips bond to plastic with liquid plastic cement, so after a light sanding, the hull modification was complete. Now the transmission cover fits correctly, and only a tiny amount of putty will be needed to fair it all together.

But there is one other problem and that is with the sprocket mounts. Dragon's

parts are undersized and don't extend to the edges of the transmission cover. Tiger Models makes a nice replacement set, but it is for use with the smaller sprockets on the VVSS suspension.

I was able to drill the parts out to work, but it's tricky, and less-experienced modelers may want to stick with the Dragon parts and live with this error. Once the tracks and sprockets are installed, this problem isn't readily visible.

Fenders. At this point I glued the lower and upper hulls together. Since the lower hull was originally for an M4A3 with a welded upper hull, the front of the sponson plates are squared off and stick out from the curving part of the cast upper hull. At first I thought this was great since there is a small triangular-shaped part of the fender on the real tank and I thought that this was what I was looking at. But I was wrong. These extensions do not extend to the edge of the hull, leaving a big gap to the side fenders. They are also too thick.

So I clipped them off, **6**, and filled, sanded, and retextured the hull. I think Dragon intends for modelers to do this since the drawings on the instructions switch from showing the extension to not showing it between two steps. But there's no note, so you have to interpret that as you see fit.

Dragon does provide photoetched front fenders with the triangular extension on them, **7**, so that may be what the kit maker had in mind. But these photoetched fenders are truly triangles, while the hull is curved a bit so the fit is not good. I thought they might fit underneath the hull but that didn't seem to work either.

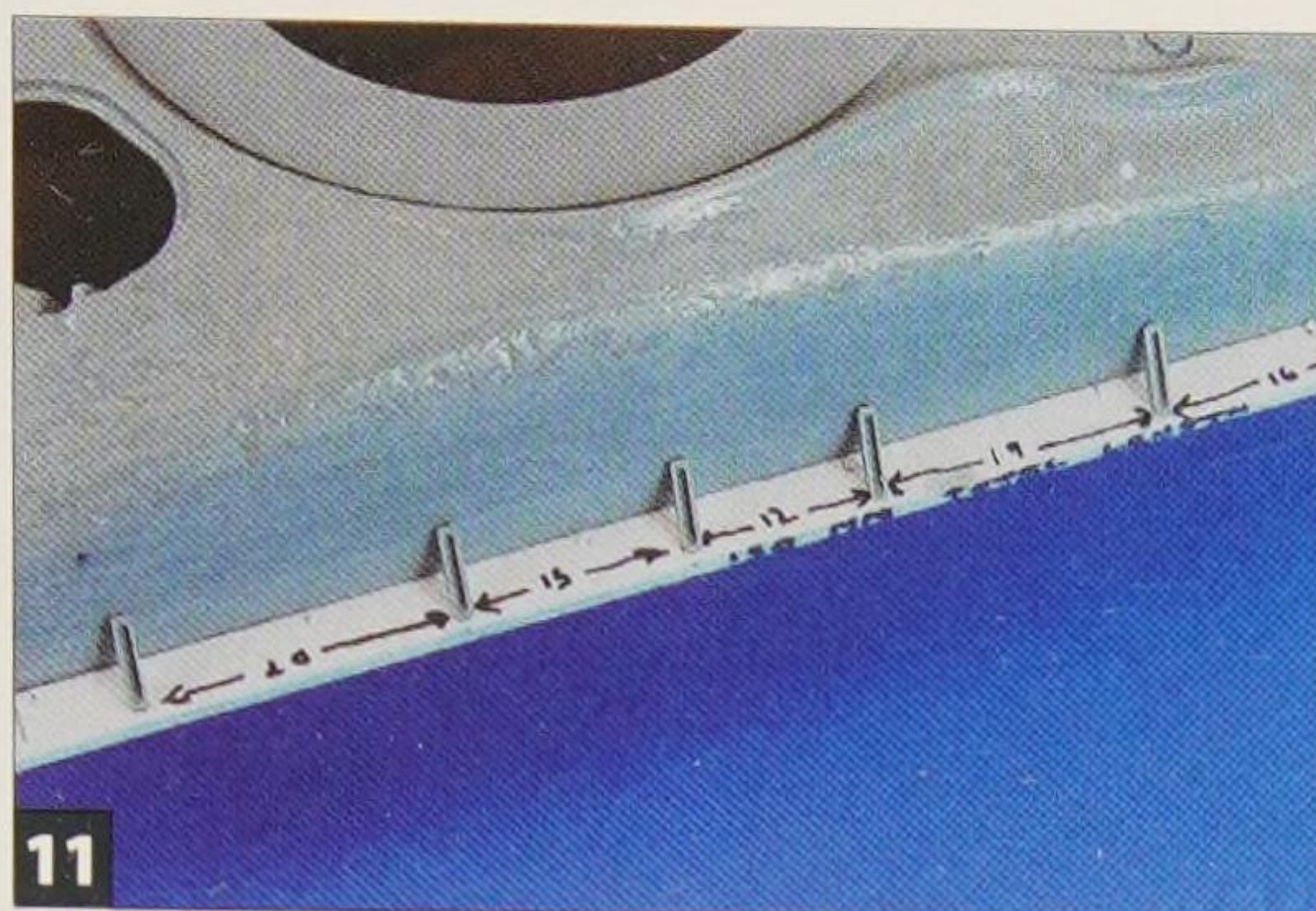
One thing I've learned in situations like these is that often it's easier to simply make your own fixes. So rather than fight the photoetched part, I just made my own extensions out of sheet plastic, **8**. I placed a piece of .020" sheet plastic under the hull and traced the shape of the front hull. From that, I used scissors to cut out that shape and cut the rest of the plastic to make the triangular extension. It was quick and easy, and the piece fits nicely to the hull. Best of all, being plastic, it's glued on solidly, **9**.

So now I had to decide if I should modify the photoetched front fenders,

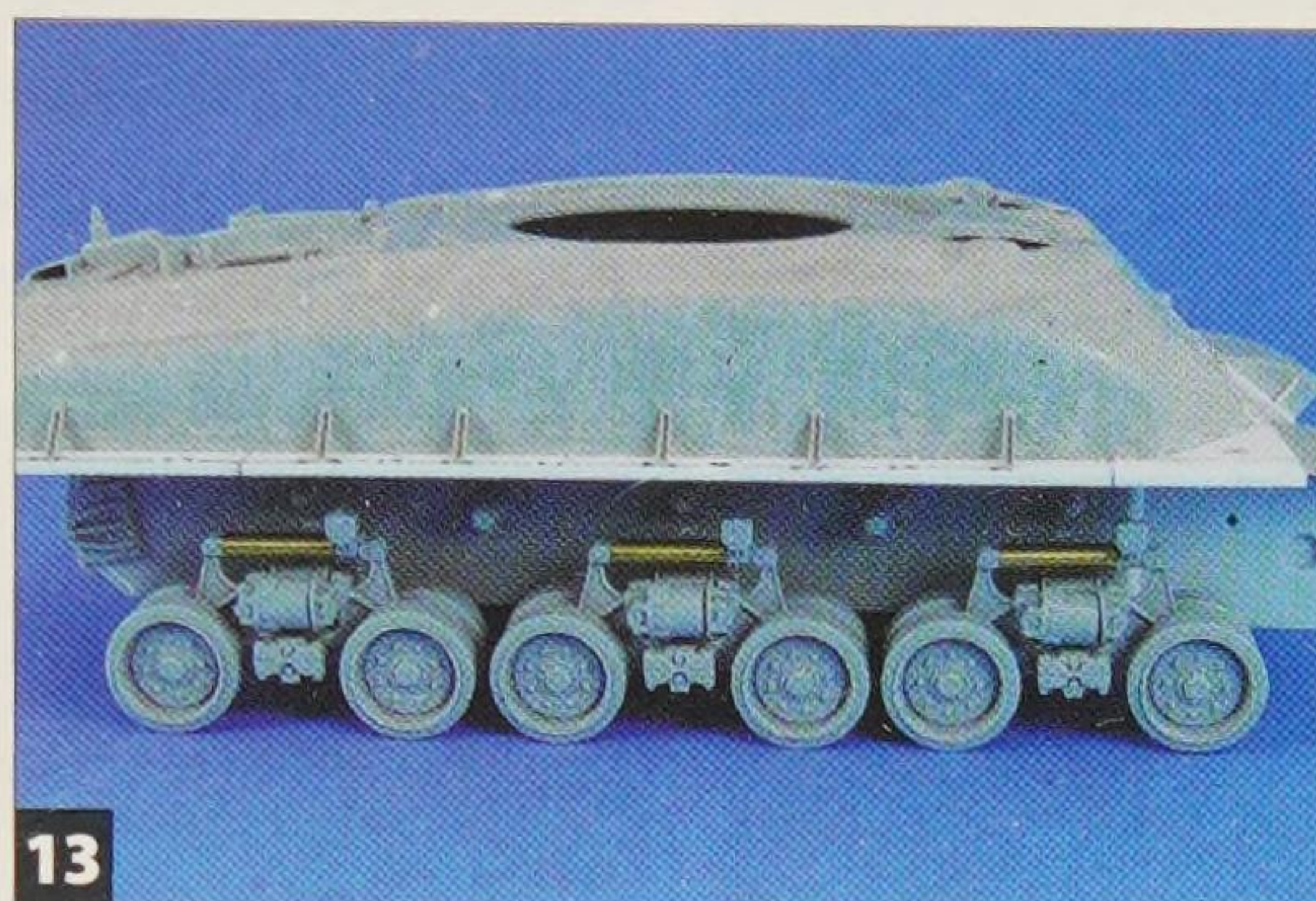
or rework one of the two sets of plastic fenders also included in the kit. I chose to rework the plastic fenders. Photoetched fenders can look really nice, but unless you know how to solder—and I don't—they can also be fragile. Trust me, it is frustrating to be right at the end of building your model only to bump a fender and glue bond along a corner. Then you get to rework the part—not fun. Instead I just thinned down the plastic fenders and glued them in place, **11**. Since the plastic is soft, it only takes a few minutes of scraping and sanding to get them thin enough to be acceptable, and the result is a strong part. I made the small flanges that lie on the transmission cover out of strip plastic, which only took a few more minutes.

All that is left are the long side fenders. Dragon adds a new set of photoetched fenders in addition to the older plastic ones which are still included as well. But there are a couple of problems. The fenders on the M51 with cast hulls differ from the typical World War II-style fenders used on HVSS M4 and M4A3 tanks with welded hulls. The WWII fenders had small holes on the outside flange to allow sand skirts to be attached. But the M51 skirts look to have been made later, and most photos show no holes along the flange since the Israelis didn't use the sand skirts. The Dragon photoetched parts include holes on the flanges for the front and middle pieces of the fenders but not the rear one. This is an odd configuration that I believe can be traced to a set of walk-around photos of a present-day M51 in private hands. But I can't find any photos of the M51 in action with side holes.

Also, the mounting arrangement of the fenders to the hull is different on the M51. The WWII-style fenders had a second flange facing inward (forming a "U" shape when viewed from the back or front), which was used to bolt on the fender to the sand skirt flange that was typically welded to the side of the hull. But the detailed photos of the M51 show a different arrangement. It seems that on the M51, there is a small metal extension welded to the bottom of the hull that extends outward to the side. The fenders are then bolted to this extension from the top and bottom, not from the side, so the fender shape looks like an L instead of a U.



The plastic fender brackets looked best to me since photoetched ones were oversized.



Go ahead and mount them on the tank before painting—it's better for aligning all those wheels.

It is simply not possible to fix these problems on the photoetched fenders, and doing so on the plastic ones would require a ton of work. Fortunately, it is actually easy to make new ones out of sheet plastic, **10**. I chose .020"-thick plastic for its stiffness, and I bought it in a width of .156" for the fender and .060" for the outside flange. I added score lines to demarcate the three segments and glued the flange strip to the fender. After a little sanding to make everything smooth, I glued the whole part to a strip of plastic that I glued to the underside of the upper hull, just like the real parts. The result is a very strong fender mount that is also more accurate. Finally, I used a punch and die to make the small bolt heads that are placed along the fenders next to the hull.

I know this sounds like a lot of work, and many modelers are intimidated by the thought of scratchbuilding. However, I really didn't do much more than cut a few strips of plastic to the proper length and glue them together. That is much easier than trying to rework the kit parts.

The last step on the fenders is to add the U-channel angled support brackets, **11**. Again Dragon provides new photoetched parts as well as the older plastic ones, but the photoetched pieces



Leaving the provided springs out of the suspension bogies makes them much easier to put together.



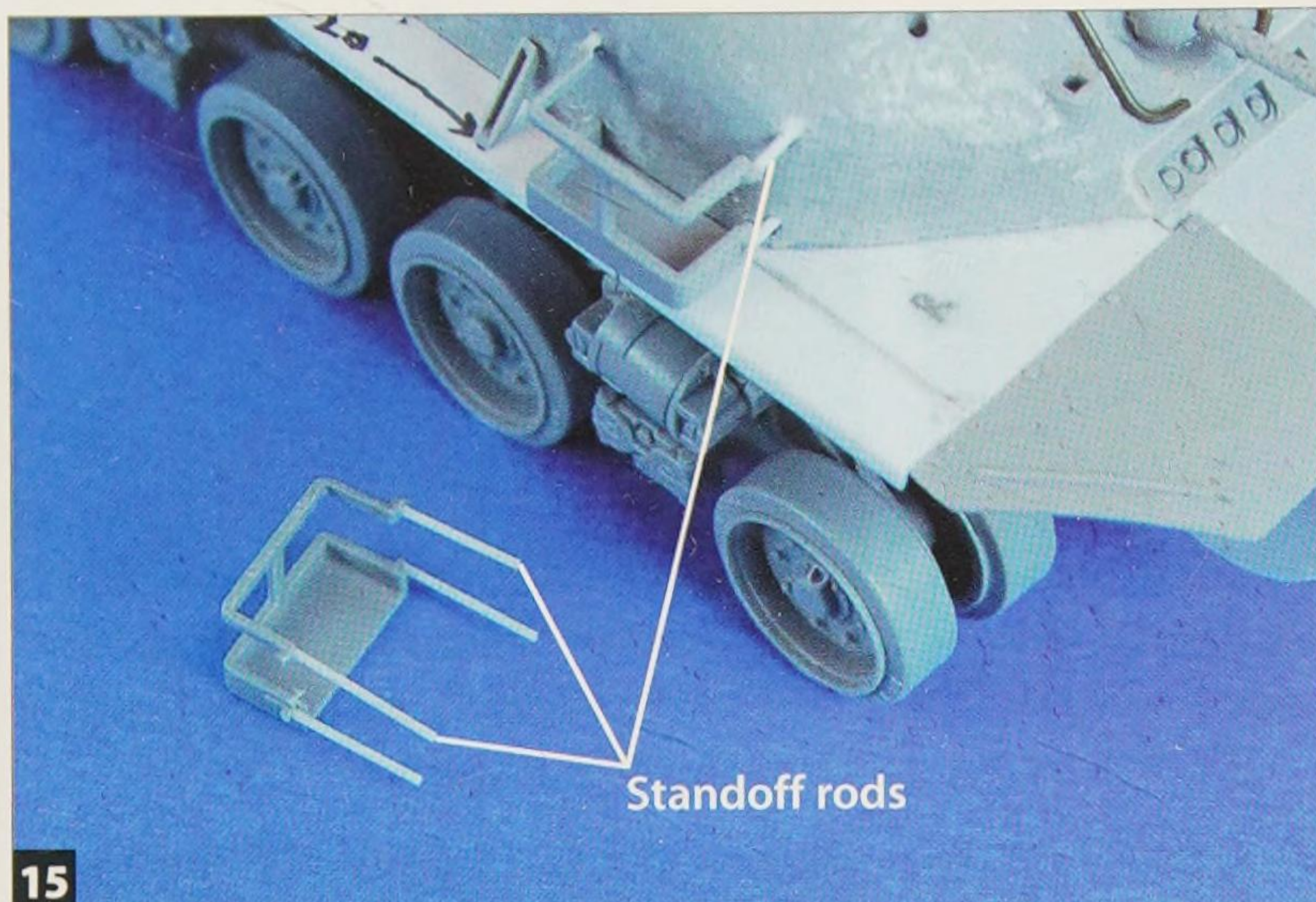
By drilling the idlers and inserting a brass rod off center, it's possible to use them to adjust track tension on the tank.

are much bigger and don't fit! Luckily the plastic parts are pretty good so you can use them instead. But where do you attach them? There aren't any specific locations called out for where to put the supports, and you have to be careful or else the hull stowage won't fit. I played around with the positions based on photos and I wrote on the top of each fender the spacing I used in millimeters.

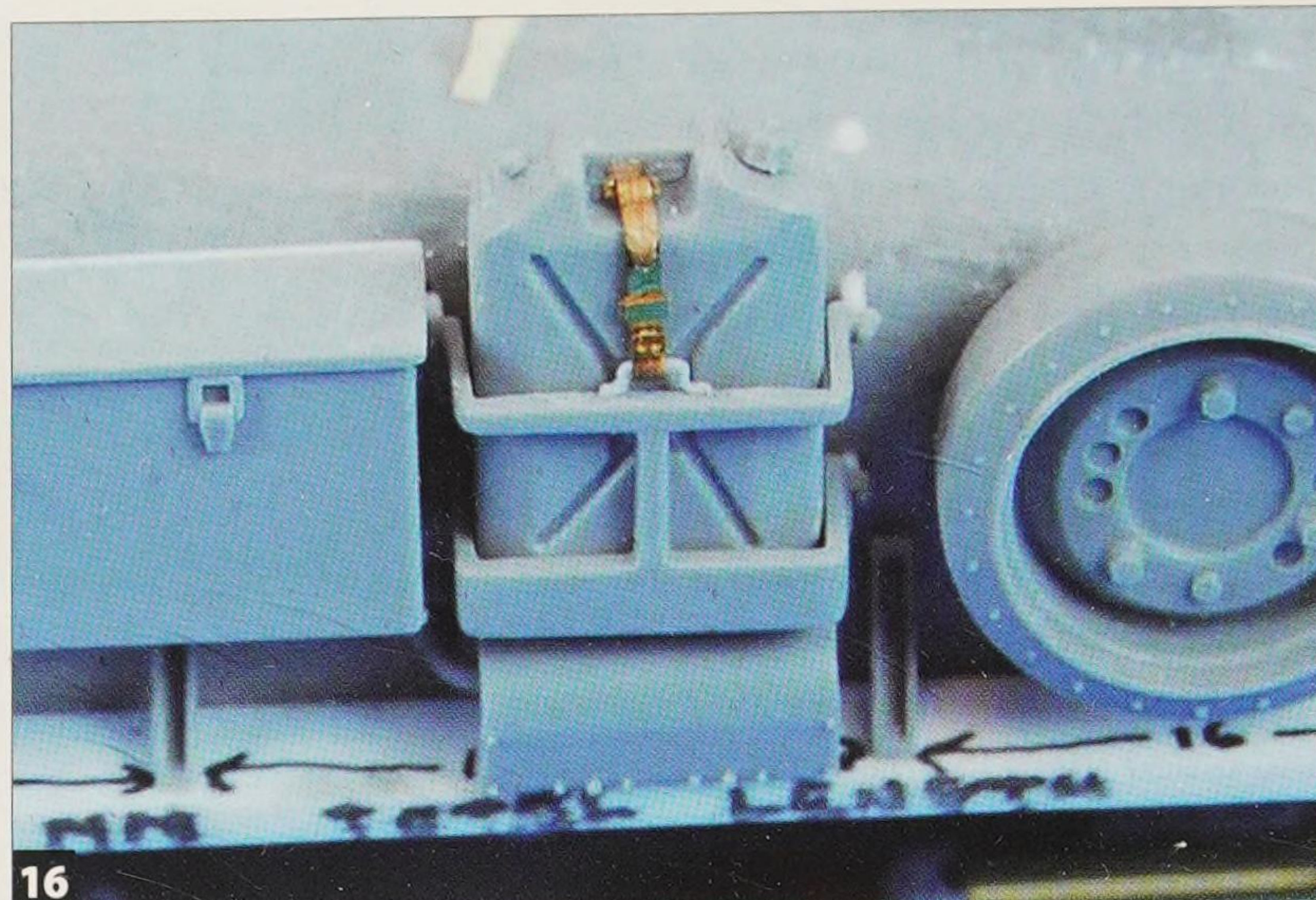
The good news is that by using the plastic supports, the resulting fender assembly is very strong so you don't have to worry about breaking it.

Suspension. Dragon's new HVSS suspension is very detailed and consists of many parts. So cleaning and assembly are very complex. The only tip I have is to not use the springs that are included, **12**. These are hidden inside the housings and are intended to allow the suspension to function. But I only want it to be able to be positioned, and by deleting the springs, it becomes a lot easier to get the whole assembly put together.

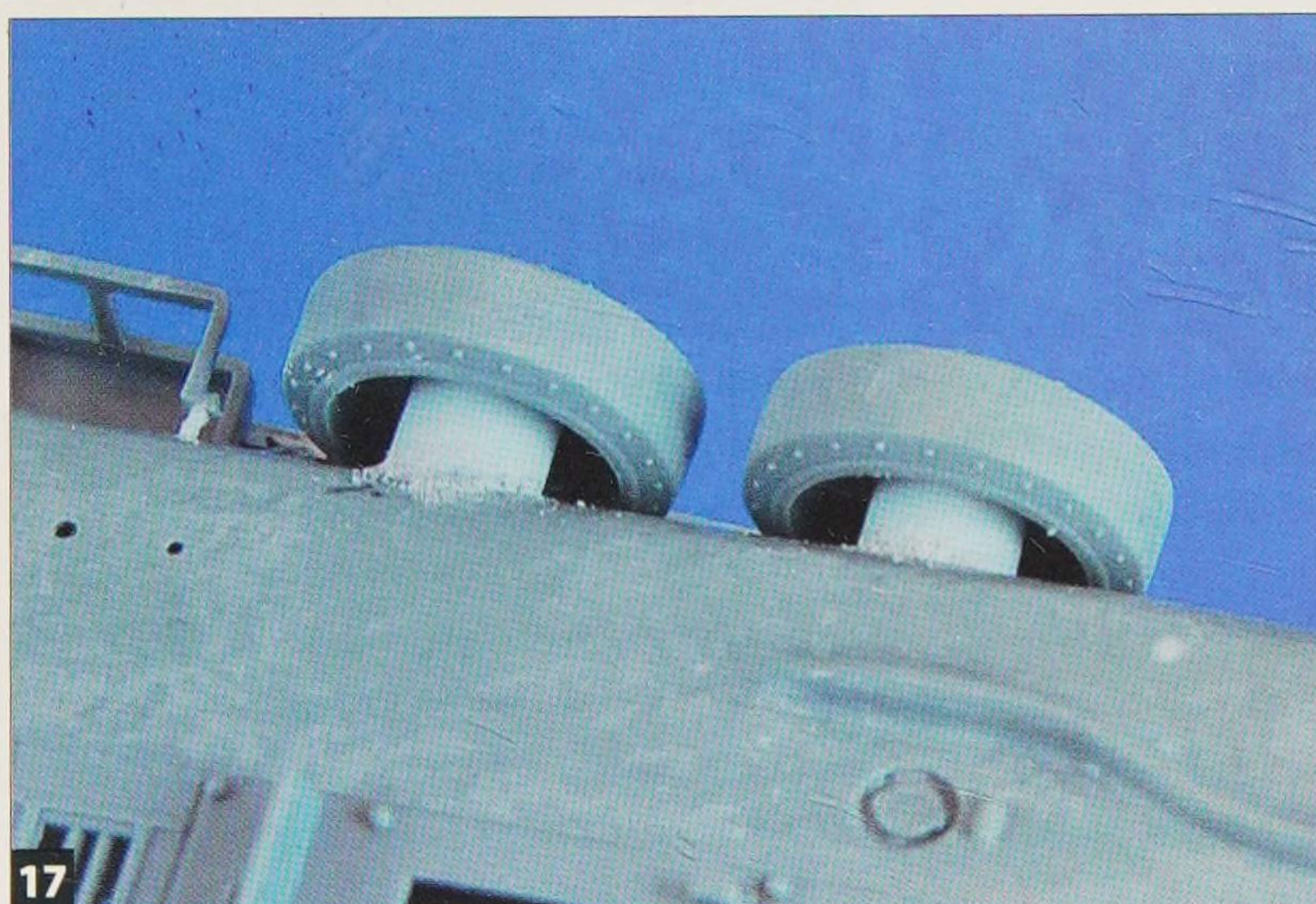
Attaching the suspension to the hull isn't tough, but it's worth doing at this point even though it will make painting more difficult, **13**. The reason is simply that it's easier to line up all those wheels.



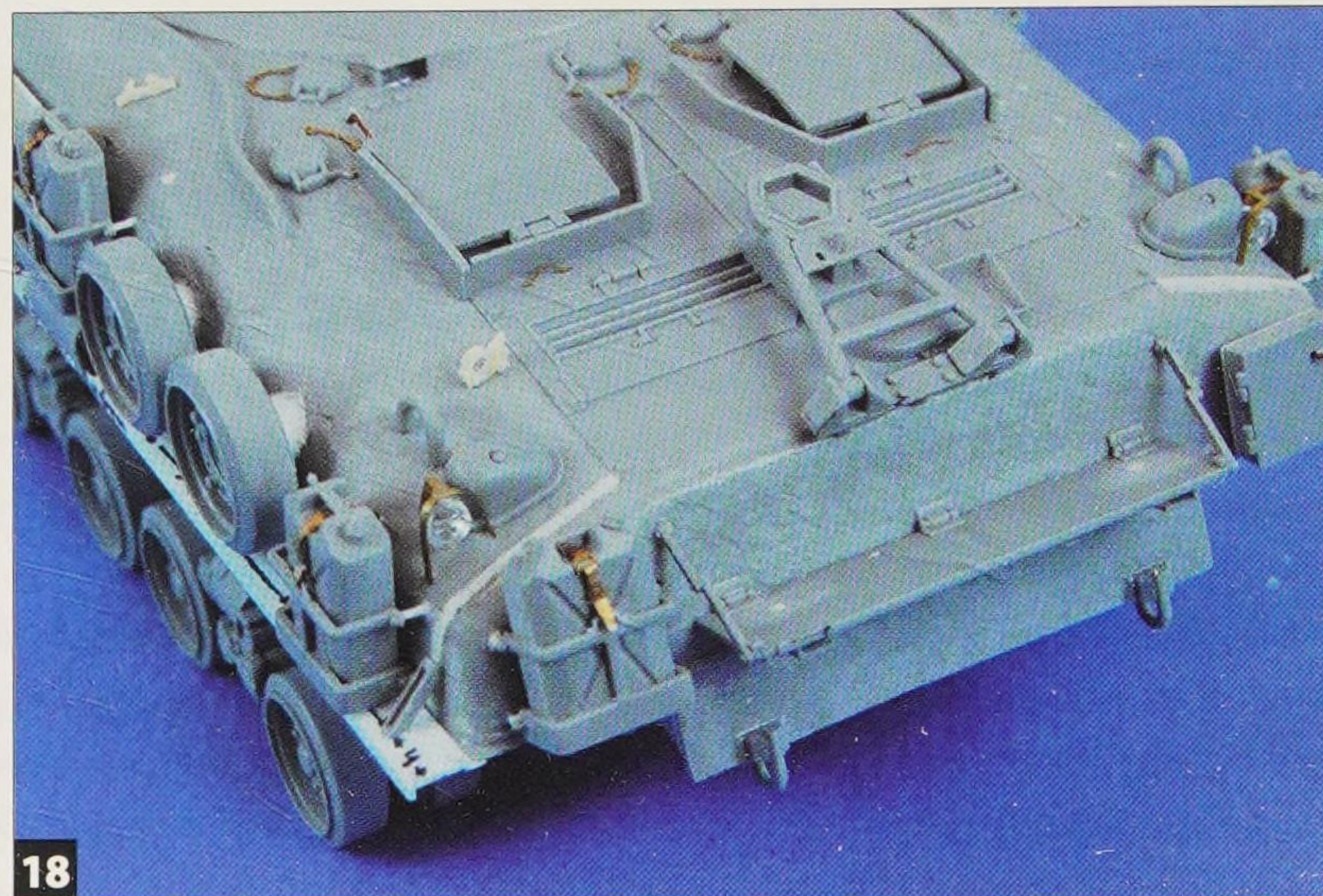
15 Of all the hull racks, the water can mounts are the most trying. To be correct, standoff rods need to be added.



16 With racks in place and cans cemented in, photoetched straps finish the job.



17 Spare wheel mounts are missing from the kit and must be scratchbuilt.



18 The rear deck features a foldable shelf and infantry telephone box.

The one change I did make was to the idlers. Dragon has the idlers mounted on a cam so their front-to-back location can be adjusted to get the correct track tension. They are intended to be placed in the right position and then glued in place.

I find it much easier to make it possible to swing them so I can adjust the track's tension while the track is mounted. It's easy to modify the idler to do this. I just drilled a hole in the idlers and the hull mounts and glued a brass rod into the idler, **14**. This is strong enough to support the track tension, so now I can fit the idlers and swing them once the tracks are in place.

Dragon provides a nice set of DS continuous-length tracks. The center guide horns are molded separately so the detail is really great. But be sure to remove two of the three links available for gluing them together. Otherwise they'll be too long.

Hull Racks. Well the Israelis sure added plenty of stowage racks and bins! The M51 has seven water-can racks, four stowage bins, two spare road wheel mounts, and a rear hull stowage shelf. Getting all of this mounted correctly is a challenge.

The water-can racks are the most difficult. Dragon provides cans in both plastic and photoetched metal. However, the problem is that these racks on the real tank are mounted on metal standoff rods, **15**, which you have to make yourself.

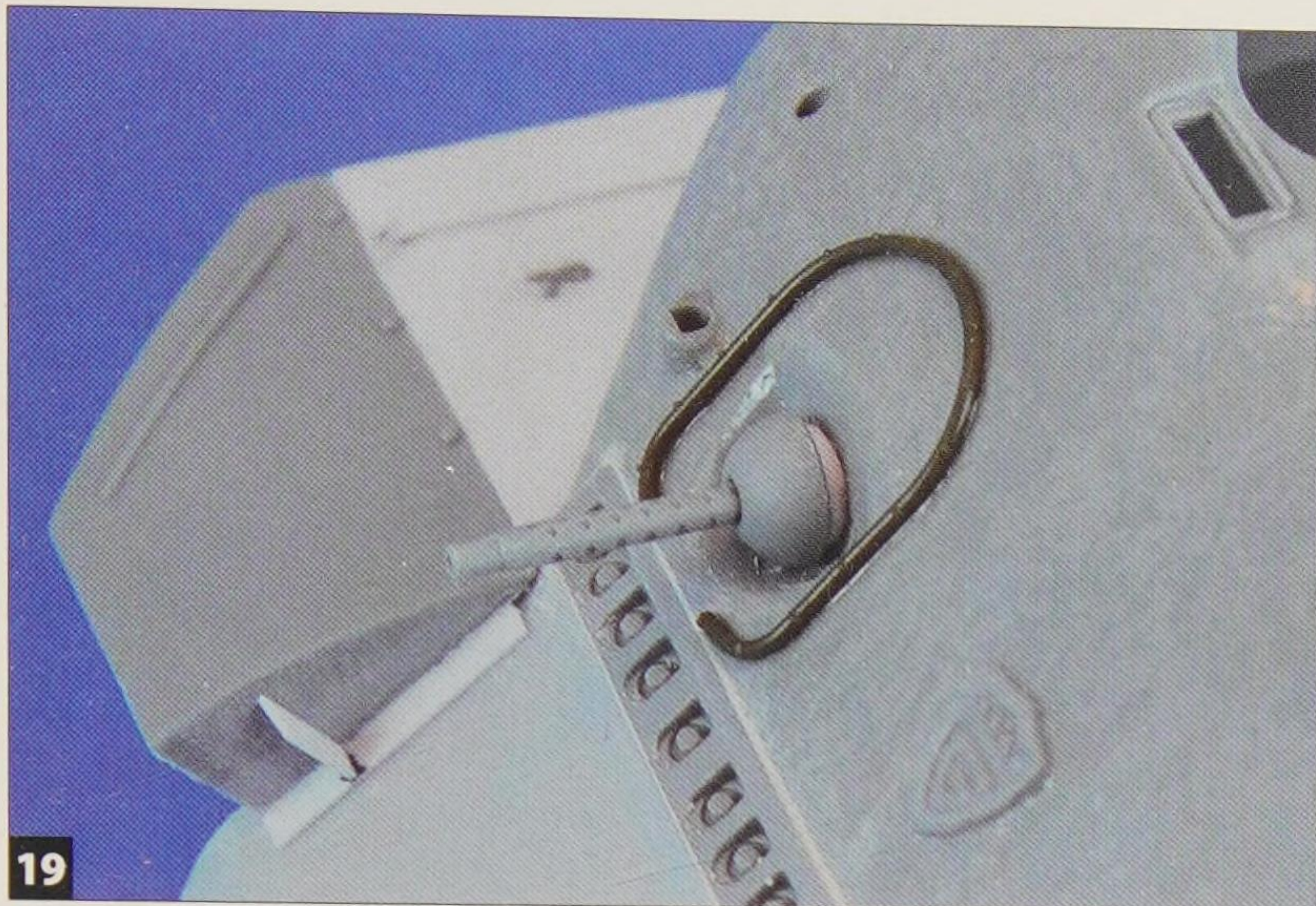
If you try to mount the racks directly to the hull, they will not be sitting straight up and down and will look odd. The rods themselves are just .020" plastic rod. The challenge is to determine where to place four standoffs per rack, considering that they must remain straight while attaching them to curving parts of the hull.

My solution was to use the plastic racks and glue the rods to the racks. After they were dry, I marked where the rods

touched the hull and then drilled holes in the hull so the rods could slide through. It worked pretty well, and I only had a couple of mistakes that had to be puttied and re-drilled. You could do this with the photoetched parts too, but they're a lot more fragile, so I stuck with the plastic parts.

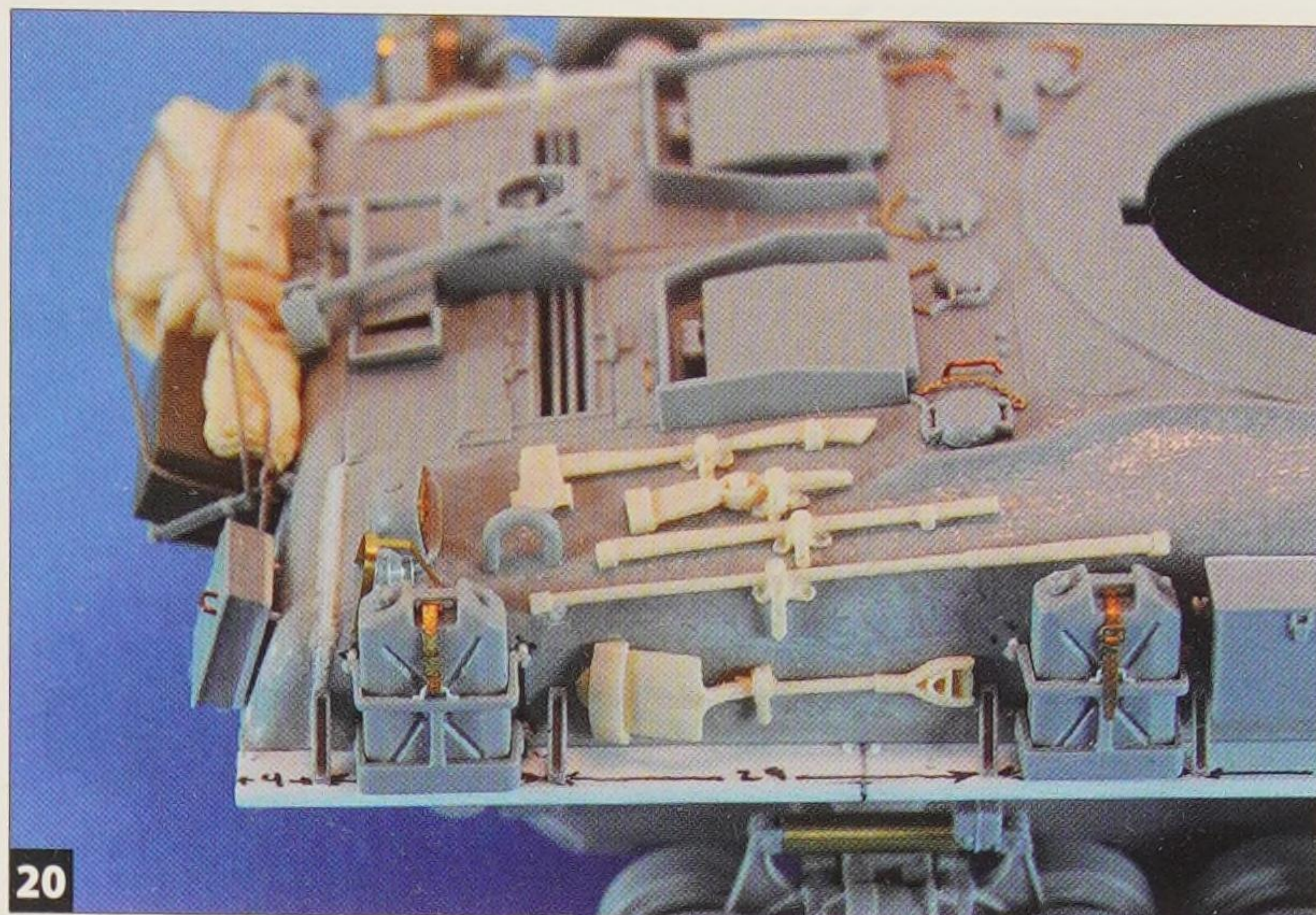
Once I had the water-can racks mounted and the cans in place, I had to fit the photoetched straps. But first I wanted to attach the small tie downs, which are nice parts sold by Tiger Model Designs, **16**. Dragon makes the straps quite thin so they can be bent to shape easily. They're still tough to install, and there's no secret to getting them assembled—just patience.

The reward for all this work is that they look very cool. The four stowage bins on the hull sides are also mounted on standoffs, so the same method works for them. But first you need to block off the backs with sheet plastic or they will look hollow.



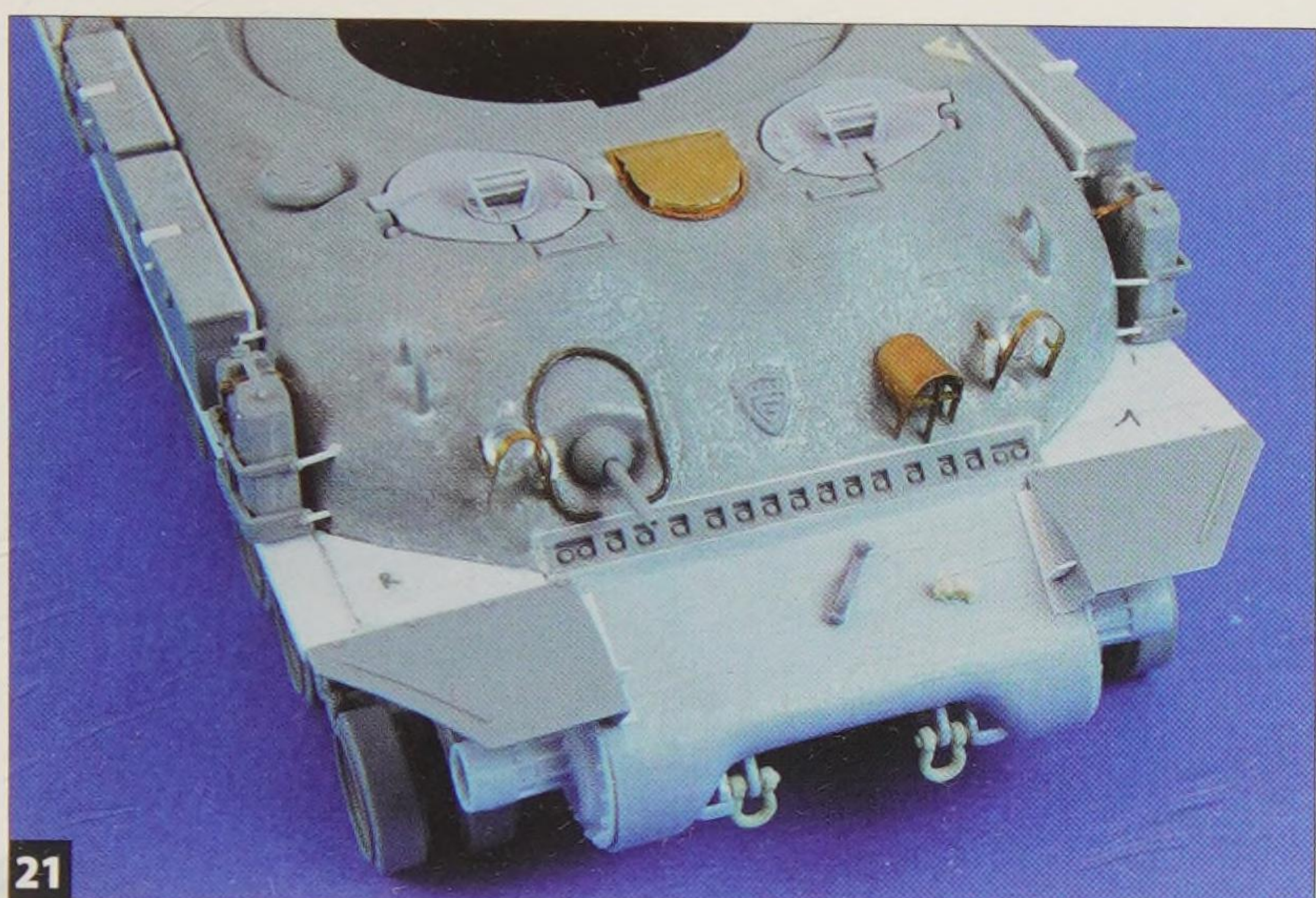
19

The bow machine gun's cover holder ring is actually from the Tasca kit of the previous chapter.



20

Aftermarket stowage and pioneer tools fill out the rest of the tank's busy top.



21

Most of the remaining front hull details are kit-supplied parts.



22

Turret casting texture should be corrected, just as with the hull. Also, the pistol port needs some putty to fit right.

On the left side of the hull are mounted the two spare road wheels, **17**. Dragon just provides the wheels but not the mounts. On the M51, the Israelis welded a piece of pipe with a circular plate on the end, and the road wheels were then bolted to them. The easiest way to make these mounts is to glue a piece of plastic tubing to each road wheel and then slowly trim it back until you get the distance and curvature to match the hull. It takes a little time but you only have to make two so it's worth the effort.

The last few items of mounted stowage are on the rear hull, **18**. In the center is a foldable shelf. The Dragon parts are a little thick but work fine if you are going to add stowage as I am. On the right corner is the infantry telephone box. It too is mounted on standoffs like the side stowage bins and it also needs to have the backside blocked off with sheet plastic. Also, I made a small handle out of brass wire.

Hull Details. The bulk of the remaining hull details are on the front. As I mentioned earlier, I saved the spare bow machine gun cover holder ring from the Tasca kit and glued it in place, **19**. The Dragon bow machine gun is a nice part but you have to add an .030" disc between the hemispherical cover and the hull to provide the proper standoff.

Most of the other details on the front hull are from the kit, **20**, and Dragon's photoetched parts are very nice. I did add the small posts to the side of the light guards. These are just .040" rod with a small photoetched chain.

Even though the Dragon hatches are pretty good, I couldn't resist replacing them with the very nice ones made by Tiger Models. These have great detail and they come with nice resin periscope brush guards that are much stronger than the photoetched ones provided by Dragon. The one piece that is not provided is the

bracket on the center of the transmission cover. I had this piece from an old Tank Workshop resin set so I got lucky. Otherwise you can make this out of strip plastic or the photoetched "sprues."

I used the tow cable brackets that come with the Formations tow cables that I used in the M4A1 build in the last chapter and will also use on this model. Finally, I used the Formations tools, **21**, but I had to reverse the strap on the shovel since it was relocated on the M51. I did this by carefully cutting the end of the strap off and then gluing it to the other side. It's not perfect, but it's hard to tell the buckle is slightly off center.

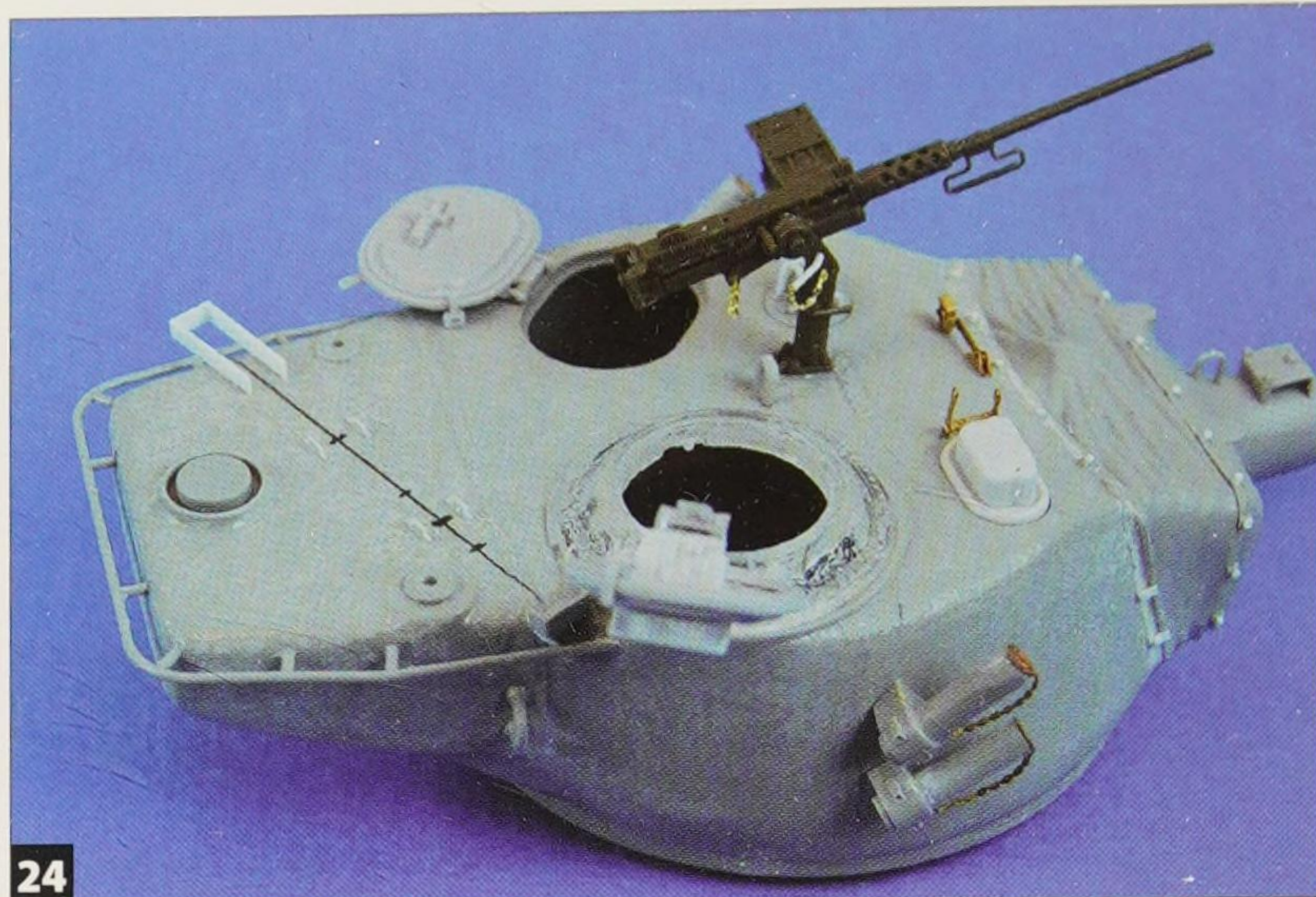
Well I told you that the M51 requires a lot more construction work and I wasn't kidding. Now on to the turret.

Turret. The turret has the same casting-texture problems as the hull. In addition, the fit of the pistol port is quite poor so



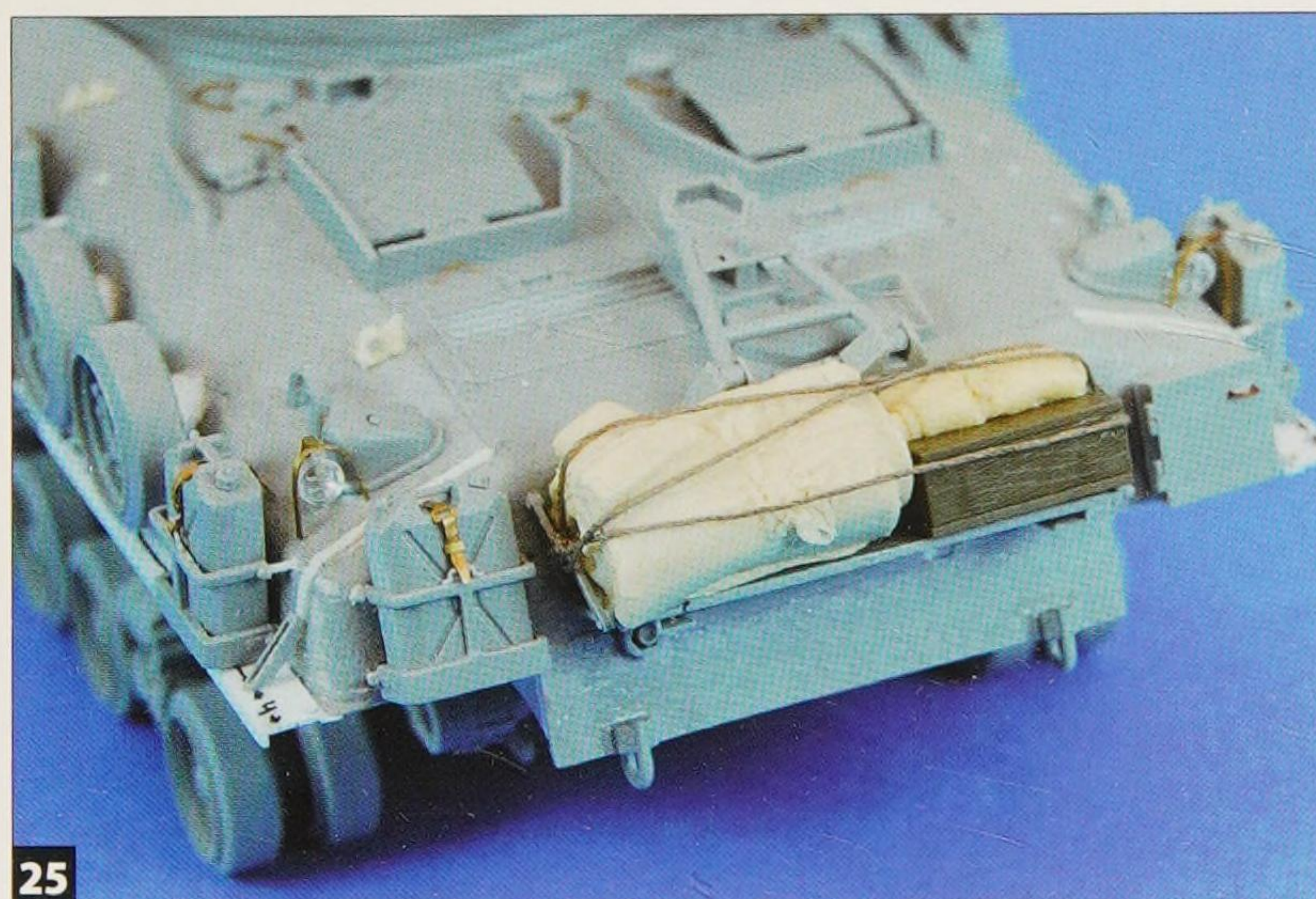
23

The gun mantlet attaches to the shroud, and those pieces, in turn, go onto the turret. All require fitting and filling.



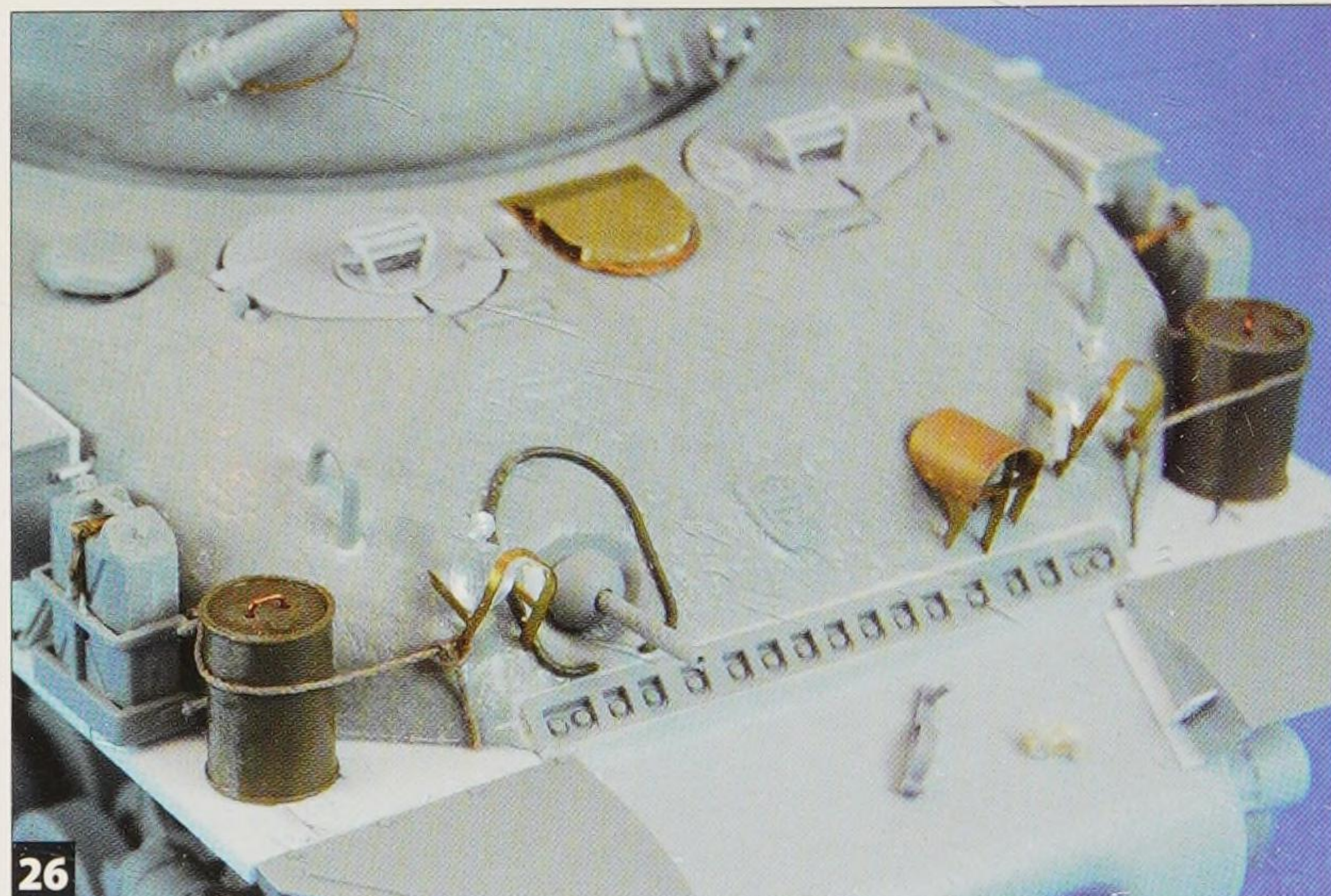
24

The .50-caliber machine gun is from Tasca, and the commander's vision cupola is from Tiger Models.



25

My choice of stowage was influenced by the variety of color and texture offered by the cans, boxes, and soft gear.



26

Oil cans strapped at the front corners were a common sight on M51s.

some heavy putty and sanding work is needed, **22**.

As with the hull, I sanded off most of the casting texture and redid it using the Tenax method I described earlier.

The gun mantlet is mounted to the canvas dust shroud, which is mounted to the hull, **23**. The fit is pretty rough on these parts too. I spent a lot of time trimming and adjusting the fit of the mantlet to the shroud, and once I'd gotten close, I mounted the whole thing to the turret. Then I used putty and nail polish remover to blend in the remaining gaps just as I had with the add-on armor on the M4A1.

With the shell complete, I turned to the details. I replaced the commander's vision cupola with one from Tiger Model Designs, **24**. This is a great item with the same high levels of detail as on the hatch. Since this is one of the first things your eye will see, I wanted it to be as detailed as possible.

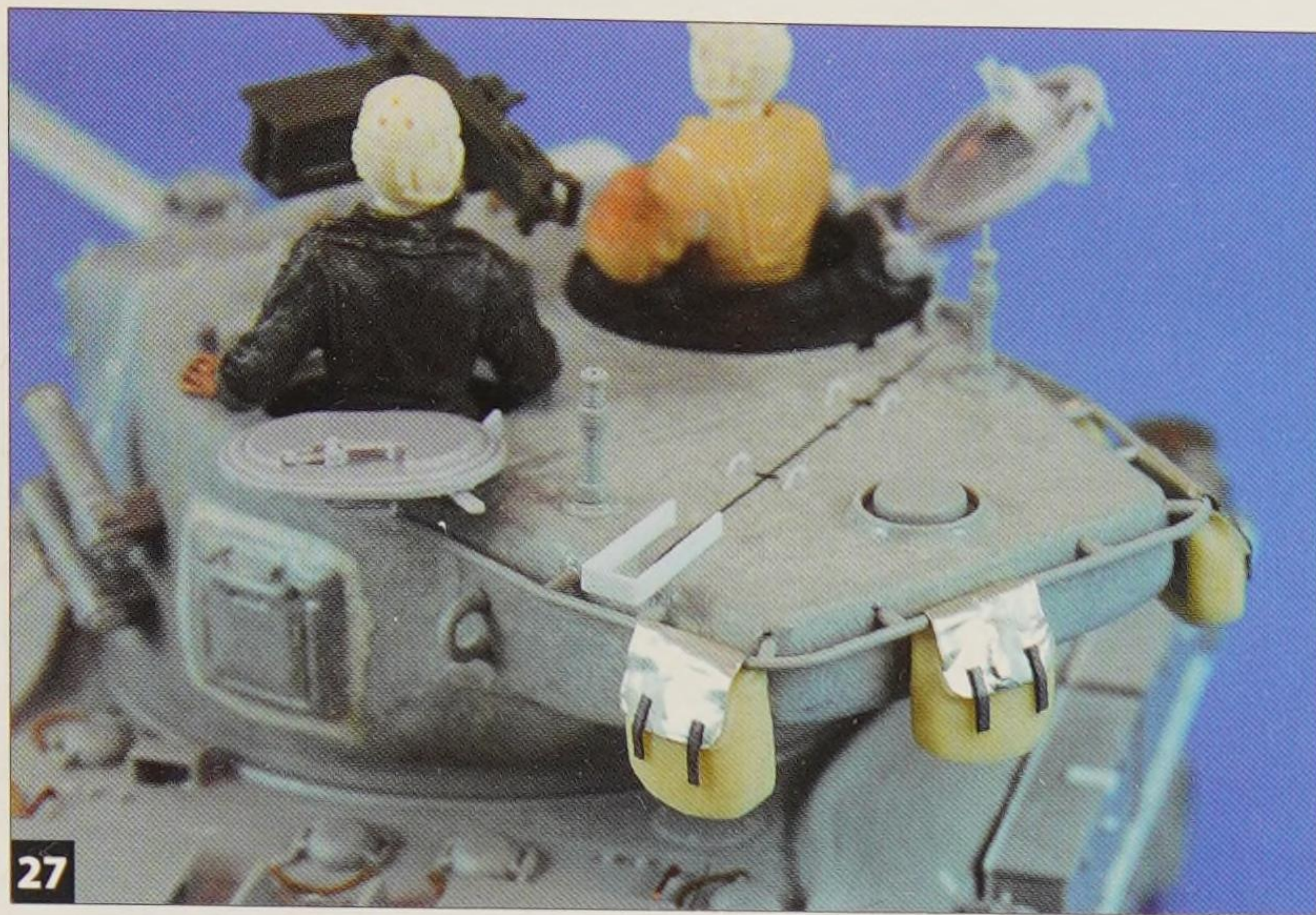
I also used Tiger Models loaders hatch for greater detail. On the back left of the turret is a large bracket that I made out of sheet plastic. The Dragon part is too thick. This bracket and its matching part just behind the cupola are intended for holding spare barrels for the .50-caliber machine gun, but I haven't seen a photo of the barrels actually stowed there. In line with these brackets is a pair of tiedowns for the straps, which are Tiger Model Design items.

Forward of the cupola is the gunner's vision port. I used the resin parts that come with the Tiger Models cupola. The brass parts are all included in the photoetched sheets provided by Dragon and this is a great bonus since the details are great. Further forward, I added the small rivet heads to the canvas dust shroud. I made these using a punch-and-die set. This is a highly visible detail that's worth the effort.

Finally, I added Tasca's excellent .50-caliber MG. This is the same set that's included in the M4A1 in the last chapter and, lucky for us, Tasca sells them as a separate kit too. For the M51, I used the later-style ammo can holder and also the pedestal mount.

Stowage. There isn't much additional stowage for the M51. I did add some items on the rear hull shelf and mainly I chose items that will be a different color from the hull, **25**. A feature commonly seen are the oil cans strapped to the front fenders, **26**.

But the toughest stowage items are the crew packs that hang from the rear turret stowage bar, **27**. Reference photos show that the Israelis would fold the packs' cover over the bar and then strap it down. I was stumped on how to do this with the packs I have until I came up with the idea of making a new pack cover out



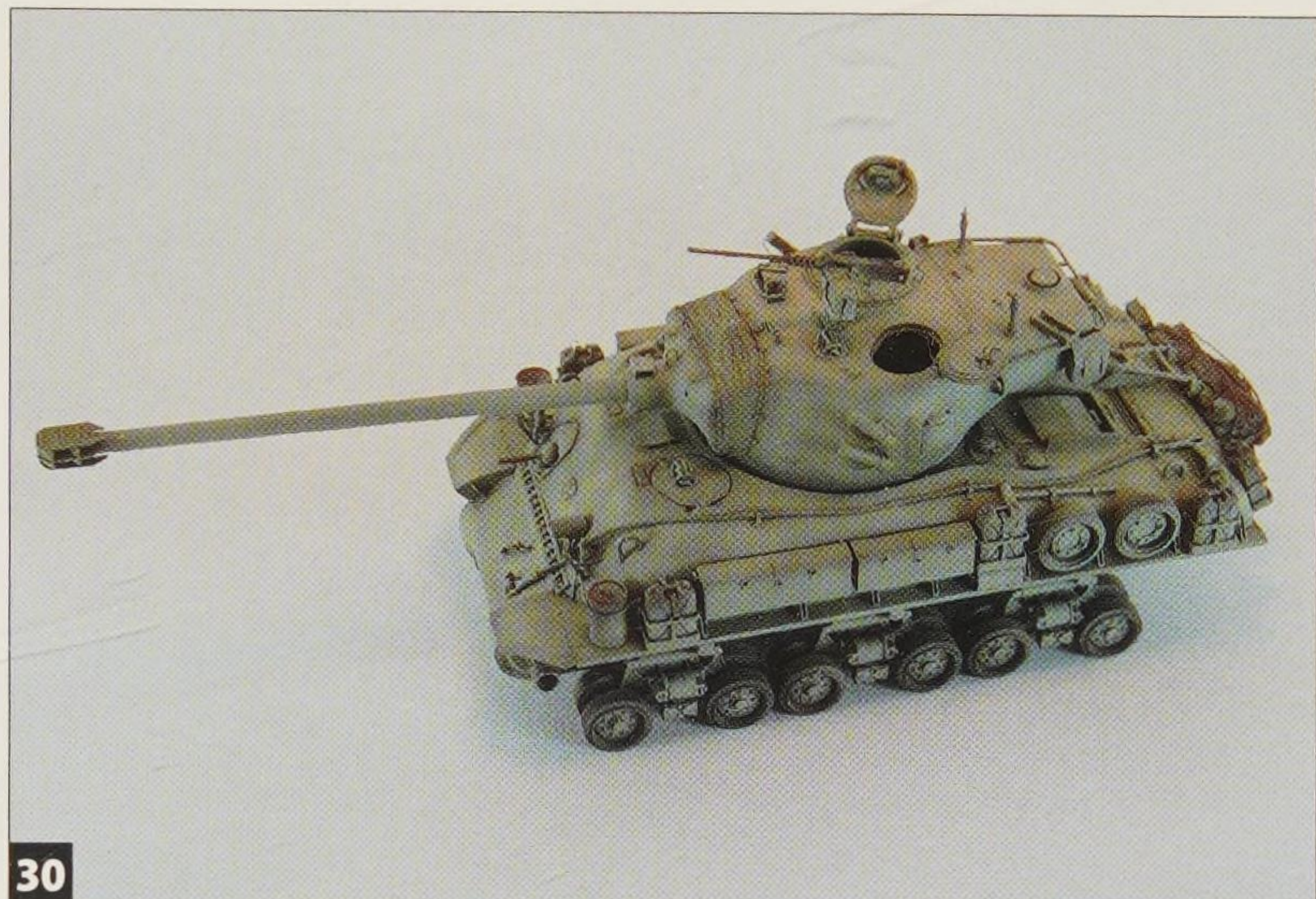
27 Reference photos show crew packs secured through their flaps. Adding lead foil flaps allowed me to replicate that idea.



28 Each crewman is a composite of a plastic body and a spare resin head—a nice way to avoid the expense of all-resin figures.



29 Everything in this construction project is present and accounted for except the tracks.



30 See Chapter 1 for a refresher on panel fading. The colors here are Dark Brown base with Model Master Israeli Sand for the fade.

of lead foil. This worked great, and I was able to replicate the look pretty easily.

Tank crew. Sadly, no one makes a correct set of Israeli tank crew members for this period. The crew's helmets look a lot like U.S. World War II soft helmets, and I was told that the uniforms are similar to what U.S. soldiers were wearing during the same time. I'm no expert—I just want the figures to be reasonably close.

I had some very nice resin heads that looked like they'd work, and I found some old plastic bodies in my spares bag, **28**. Using plastic bodies with resin heads is a great way to get nice-looking figures without spending a lot of money on all-resin figures.

That wraps up the construction on the M51, **29**. As far as Shermans go, this is about as tough a construction project as you'll run into. I think it's worth it, since the tank will look great with some paint.

Painting. In the last chapter I described in detail the panel fading method for painting models, so I won't repeat it here.

For the base color, I used Dark Brown, which works best for tan-colored tanks. But before that, I airbrushed the wheels with the Model Master US Army Helo Drab that I like to use for worn rubber. There are so many wheels that it's easier to airbrush them first and touch them up after the other colors have been airbrushed.

The primary color for panel fading is Model Master Israeli Armor Sand, **30**. There's a pretty healthy debate going on the Internet forums about the correct color for the M51. As far as I can tell it seems the answer is influenced by what period you are modeling.

From my photos, it appears that the M51s are noticeably darker than the terrain, so the Armor Sand color seems pretty good compared to a typical sandy desert color.

For the last round of panel fading I lightened the Armor Sand with white. Then I dry-brushed with a heavily lightened Model Master Afrika Dunkelgrau, **31**.

For the markings, I stuck with those in the kit. They are nicely done and represent the correct time period. I painted the details using the same colors and methods I used in the M4A1 chapter. The same is true for the stowage. I made a point of painting the packs in straight Olive Drab to add more color to the overall model.

Weathering. I followed the same steps for weathering the M51 that I used for the M4A1 in the last build-up, but with a few adjustments for the vehicle's color and the terrain, **32**. I reduced the concentration of the oil wash by about half (now roughly 10 percent paint to 90 percent thinner) because the tan color can really change dramatically with the wash. It's better to go with a very thin wash and re-apply it



31

I lightened the last fade coat with a touch of white and followed it up by dry-brushing with lightened Africa Dunkelgrau.



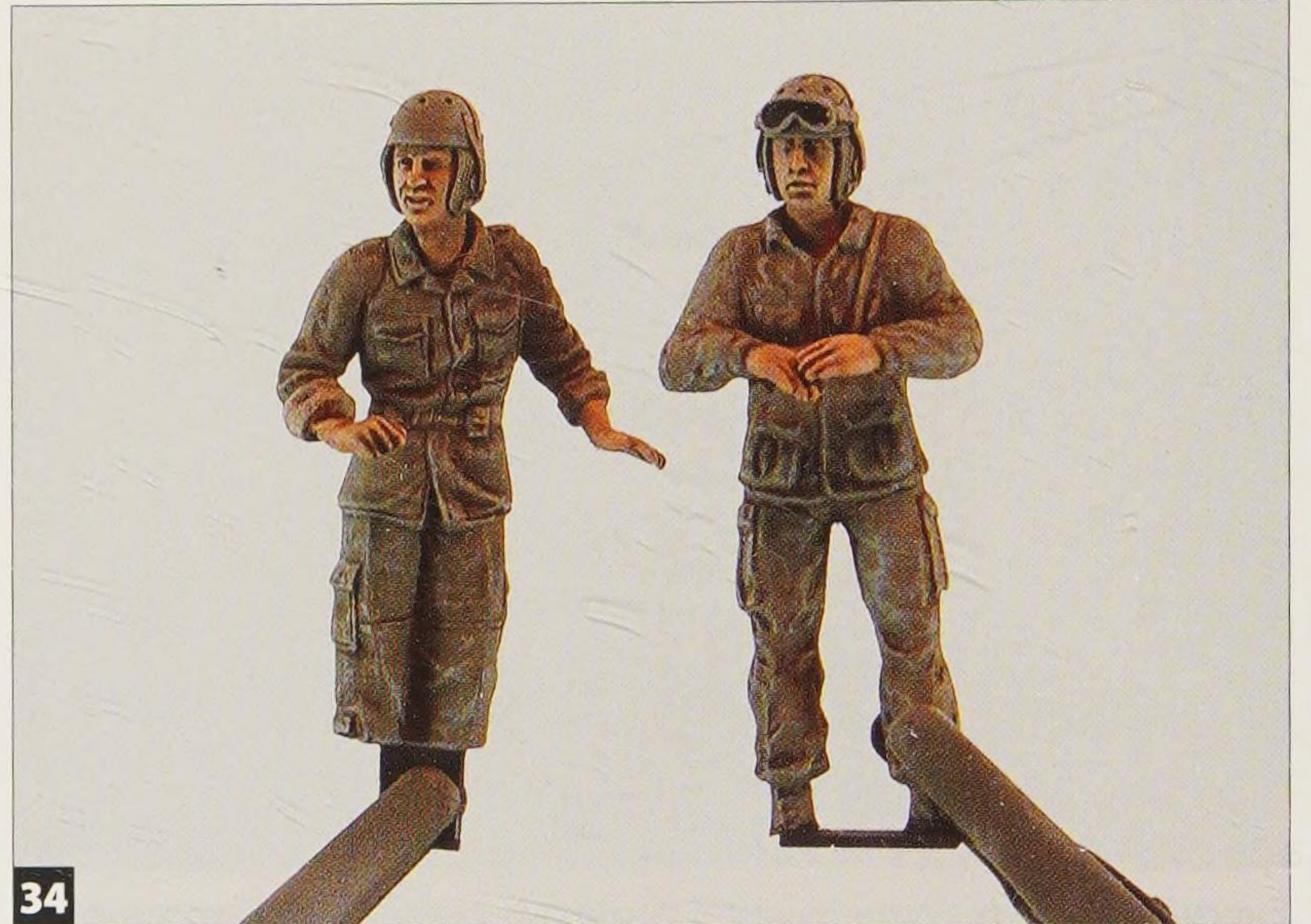
32

The wash differs from the previous treatment on the M4A1 mainly in the weakness of the wash—10 percent paint to thinner.



33

The “dust” coat is Tamiya Deck Tan. It works better for desert environments than the Buff of the M4A1 in the last chapter.



34

The figures received the same treatment and colors of the previous Sherman crew.

if necessary. I didn’t add any streaking or fuel stains, since I really couldn’t see either of these in the reference photos.

For the “dusting,” I substituted Tamiya Deck Tan for the Buff I used in the M4A1 build up, **33**. The Deck Tan is a much lighter color and better represents the sandy dust of the desert. Similarly, I made up a much lighter mixture of the pigments again to represent the desert colors. In this case, the pigments are a combination of Light Dust and Dry Mud.

The key to this weathering process is to make sure the dust is a little lighter than the tank’s color. This gives a nice color variation from top to bottom and helps give the impression of the M51 operating in the dusty desert environment.

Painting the figures and tracks. About all that is left for the tank itself is to paint the figures and tracks. The figures were

painted in the same way as the M4A1 tank commander since they are wearing very similar uniforms and helmets, **34**.

I started by painting the tracks Model Master Metalizer Dark Anodonic Gray. In the reference photos, the tracks are shown in a dusty dark metal color. They don’t exhibit much rust since the environment is very dry. I gave the tracks a flat coat and then the same weathering I used on the lower hull. After applying a liberal amount of pigments, I used my thumbs to rub off quite a bit and expose the dark anodonic gray color beneath. Simple.

Groundwork. For this model, I wanted to make groundwork that was more complex and engaging than a simple base. Also, I wanted rockwork to add colors other than tan, so the model wouldn’t blend into the groundwork too much. Woodland Scenics, which makes products for the model rail-

road hobby, offers a great series of rubber molds for making rocks. These molds are intended for use with plaster of Paris and can be used many times over. The company makes molds for all types of rocks from small ones to large chunks of cliffs.

For the base, I used a mold that makes a large rock face, **35**. I add a little black paint to the plaster of Paris so it’s gray like the rock I’m making. I still paint the rocks, but having a solid gray instead of white is helpful in case it gets chipped.

After letting the plaster set for about a day, I popped it out and let it dry for about a week. While it was drying, I cut a 1/8"-thick sheet of styrene to the shape I needed for the base, and then I cut a piece of polyurethane refrigerator foam to make the elevated section, **36**.

When I was sure the plaster rock was completely dry, I used a handsaw to cut a slice that was the same height as the poly-

urethane foam. This is the main rock wall. I then cut the remaining parts to fill the rest of the base in front of the wall and also to make a few outcroppings on the back side of the elevated section. The M51 will be driving on the elevated section, which will look like a narrow desert road.

When I was happy with all of the pieces, I glued them together with five-minute epoxy, which adheres well to all these different materials. I sheathed the whole base in .020" sheet plastic. I determined the shape needed for each side by tracing the base's pattern onto the sheet plastic with a marker.

Once all of this was dry I mixed up a little more plaster of Paris and used it to fill the gaps among the rocks and between the base parts and the side sheets. Plaster of Paris is very soft, so once it all dries you can easily use a hobby knife to cut and shave it to blend it in together, **37**.

I began painting the rocks by giving the entire base a flat black base coat, **38**. Then I panel faded in two shades of gray using the same methods I use on my tank models. This was followed by a dry-brushing using a lighter gray and after a flat coat, **39**. I used a Raw Umber oil wash to complete the rock weathering until I add the rest of the groundwork.

I finished the base by applying the groundwork. It's the same basic mixture that I used in the M4A1 build-up, but with sand from the beach replacing the dirt from my yard. I also used a little more Presto Patch, so the groundwork would have a more compacted look since I didn't want it to look like beach sand. Once it dried, I was disappointed to see that it was too light. So I gave the whole base a wash of Windsor Newton Vandyke Brown oil paint to darken it up. The main point of this confession is that there is always some type of fix.

Finally, I used some of the same pigments on the base that I used on the M51. Doing this links the vehicle to the base through the weathering, **40**.

This model, with its fender modifications, aftermarket parts, the need to match textures, and adding more-complex stowage, was a big jump up in construction and detailing work, **41**. But it's worth it since the M51 is an interesting Sherman and one that provides a dramatic contrast to the M4A1 in the first chapter.



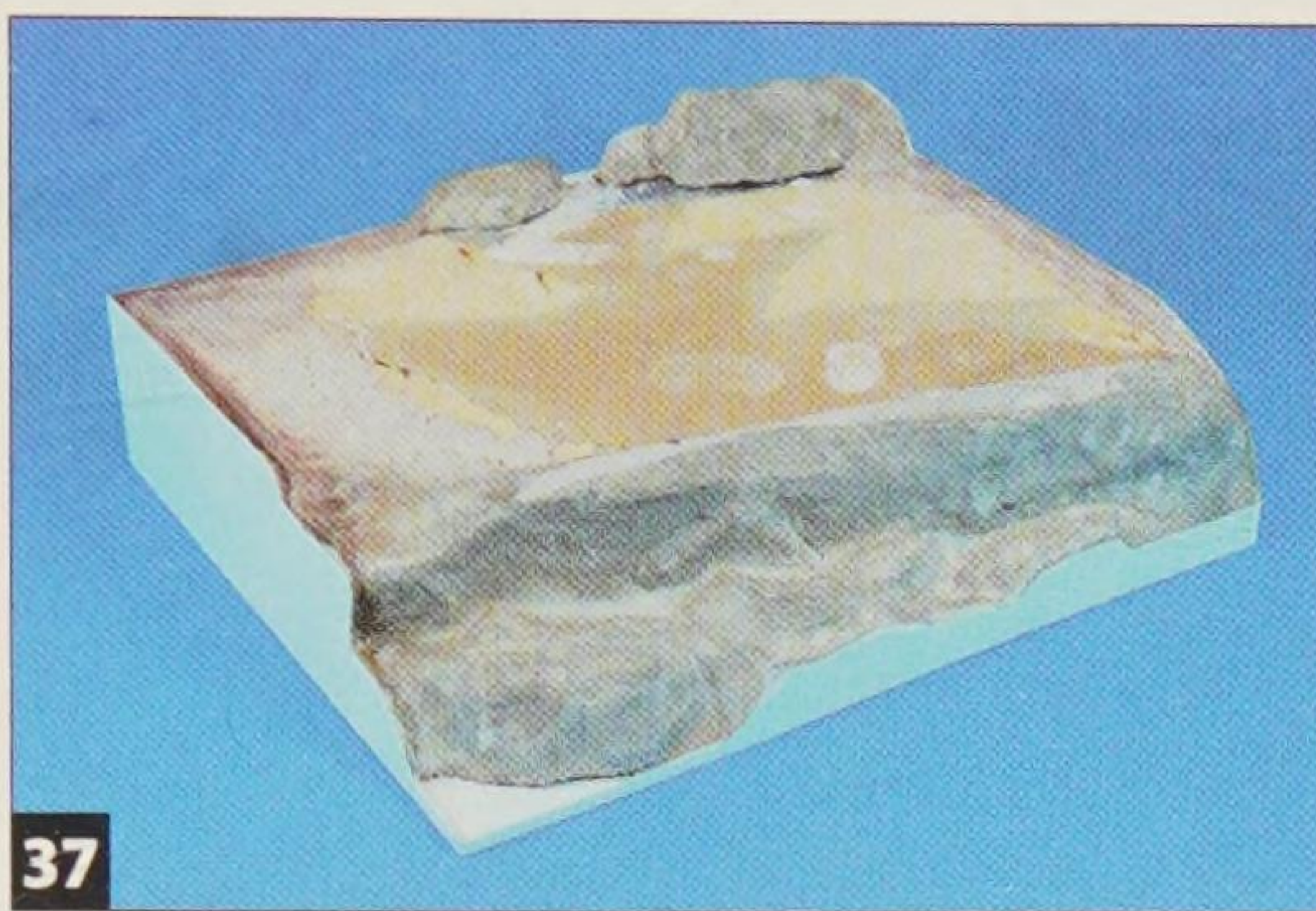
35

This rock face is plaster of Paris cast in a mold for model railroading scenery. Give it about a day to dry.



36

Attach the "rock" to an elevation built up from sheet foam, all set on a base of sheet styrene.



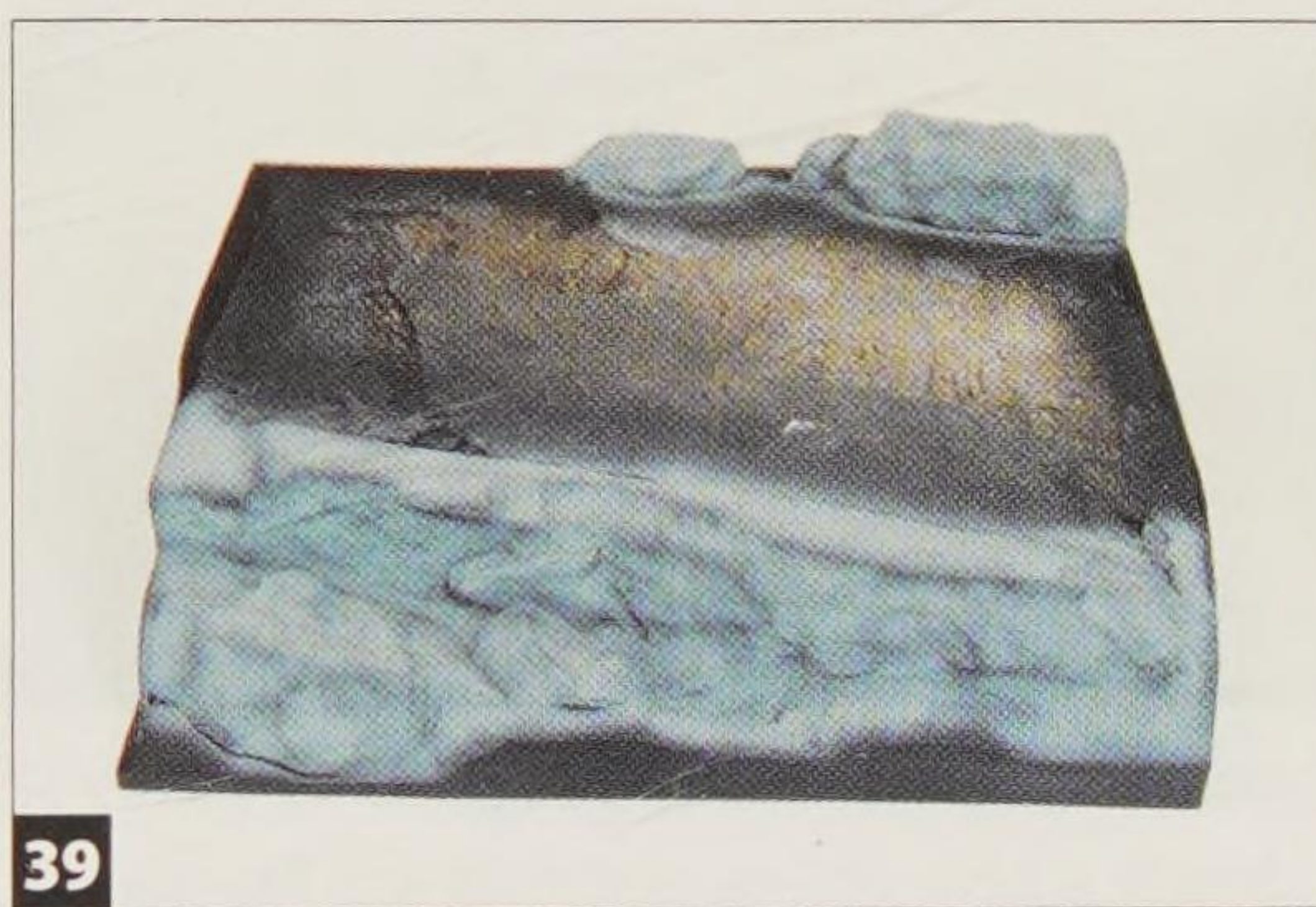
37

This view shows how the sides of the base have been trimmed out in sheet styrene too.



38

Painting the rock face begins with a base coat of black.



39

Use the panel fading technique with a few shades of gray over a black base-color for the rock face.



40

Wash with Raw Umber. Here's the groundwork with wash and pigment.



41

The M51 project represents a big step up in construction difficulty, but the results are worth it.

3

MAXIMUM DETAILS, improved groundwork

U.S. Marine Corps M4A2 in the Pacific

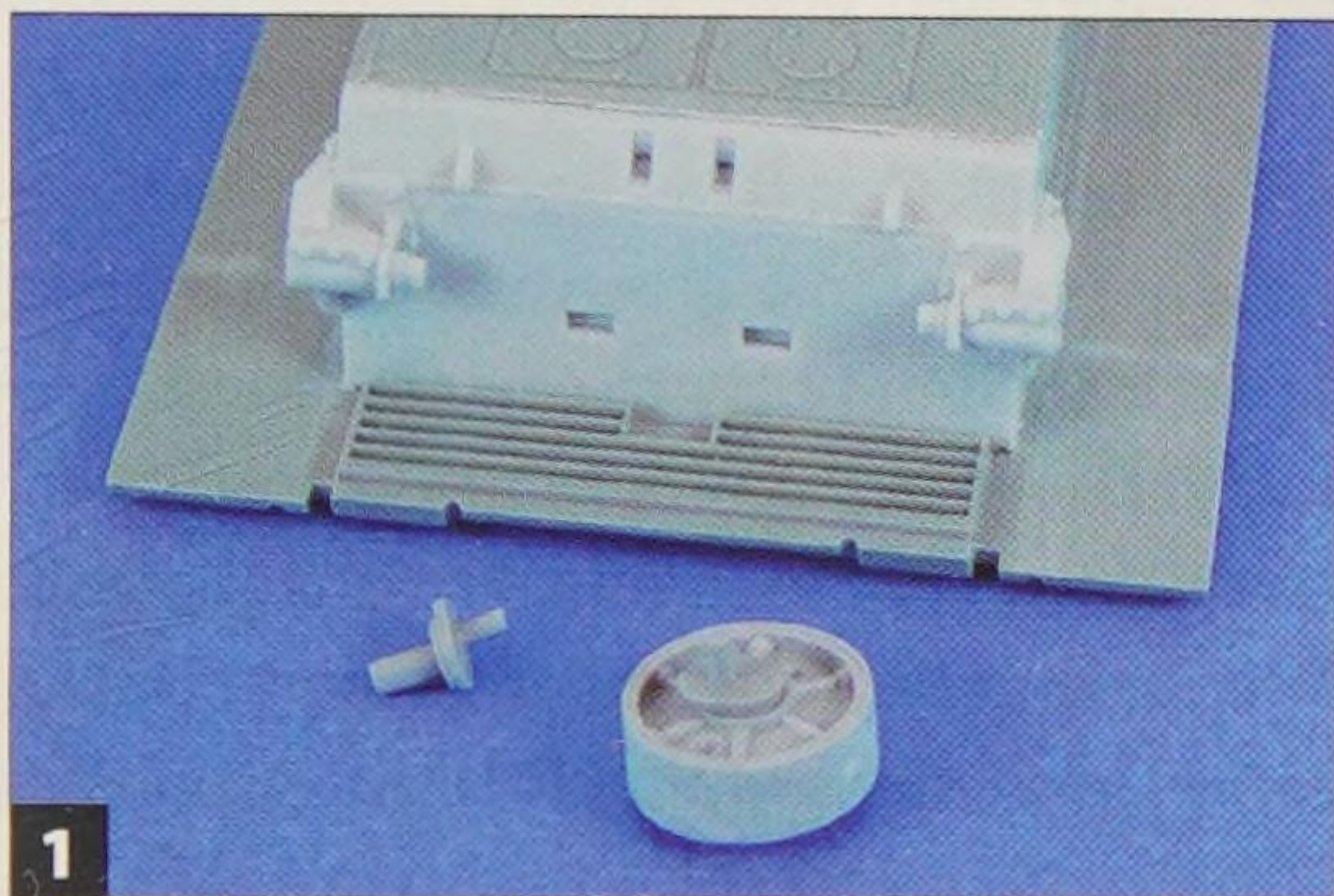
The Pacific island-hopping campaigns were brutal, inch-by-inch battles that were as much a test of wills as anything else. Names like Guadalcanal, Tarawa, Saipan, Iwo Jima, and Okinawa still evoke strong memories and emotions. In the few tank-on-tank battles, the Sherman was more than a match for Japanese armor. Its role was more typically infantry support, often under attack by Japanese infantry and well-concealed anti-tank guns.



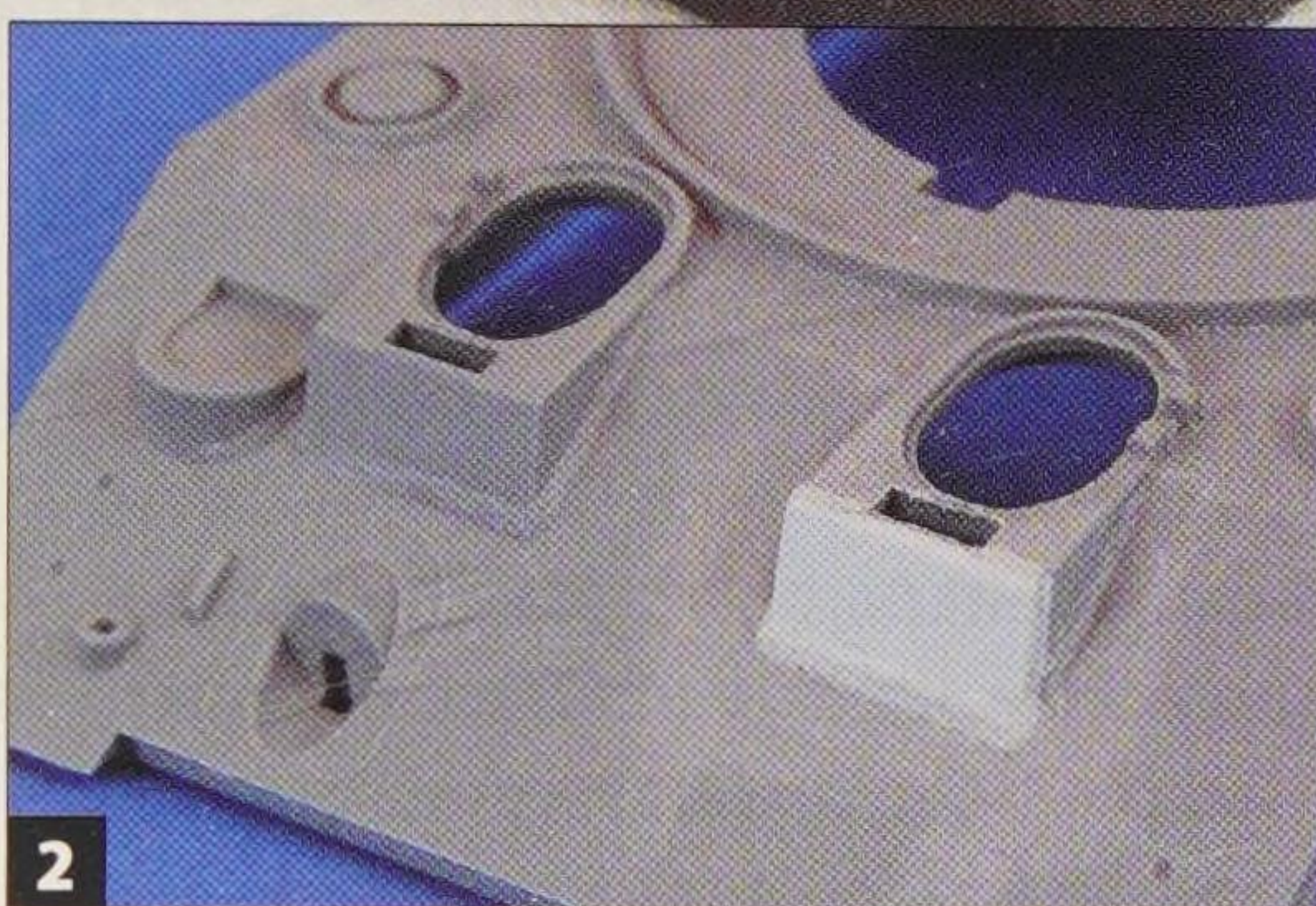
Dragon's Tarawa kit makes a great starting point to pile on the detail. And various detail sets such as wooden anti-magnetic mine boards, wading kit, hatches, and photoetched details make a Pacific M4A2 that looks like a Marine's best friend.



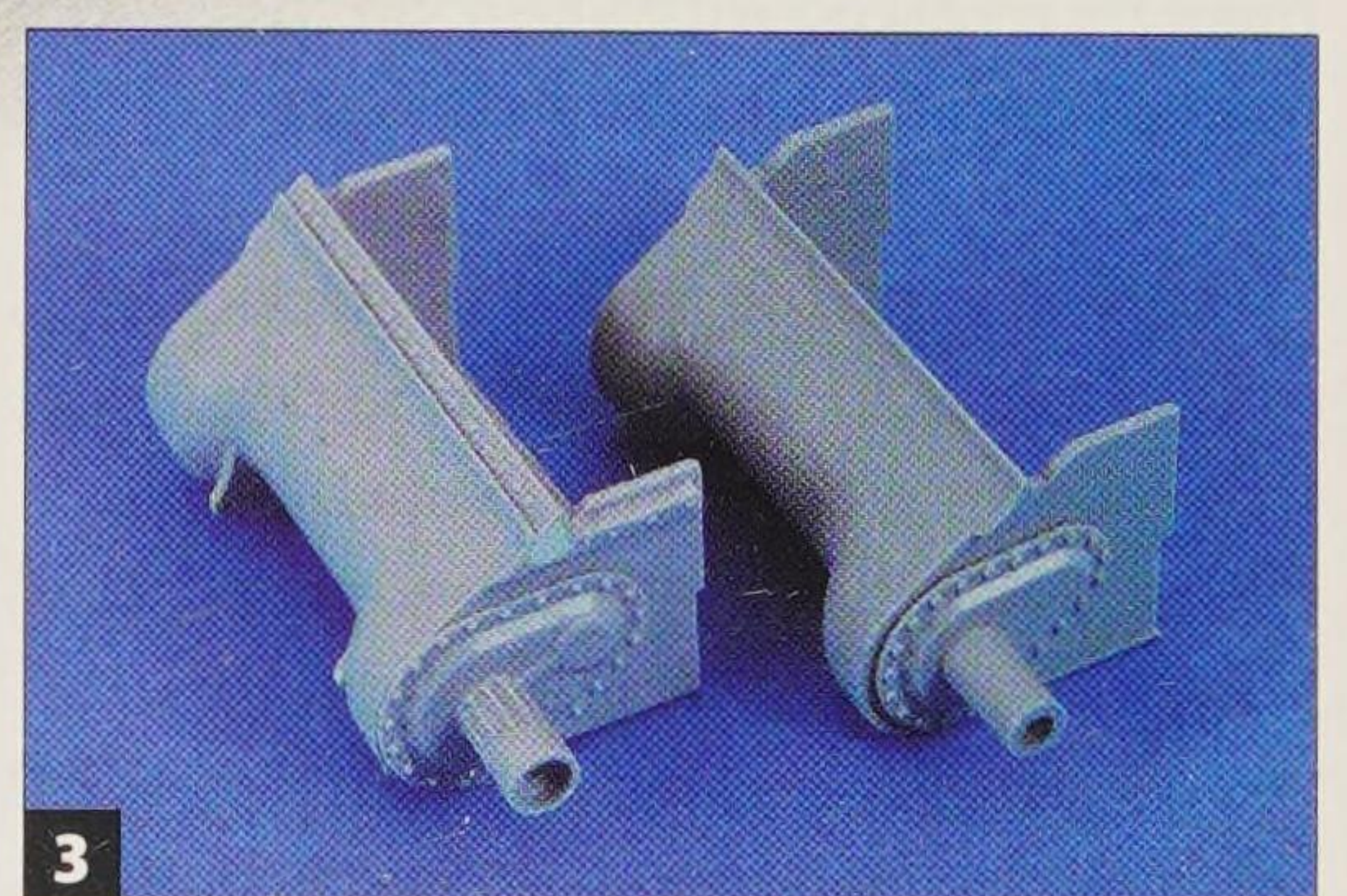
This project puts the Sherman to work in a more-detailed mini-diorama supporting infantry.



1 Tiger Models idler cam lets you set track tension even after the track is in place. There's a new rear hull plate too.



2 It's easy to correct a too-thin driver's hood. Shave off the existing welds, add a sheet styrene hood, and build a new weld line.



3 The Tiger Models transmission cover, left, is better detailed than the kit item and is an easy swap.

In the early campaigns, the battles started before the Marines even made it to shore. Thus, the Marines soon started to add homemade deep wading gear so the tanks wouldn't get swamped driving ashore, and they added wood plank armor to protect against magnetic charges. Some units even started to camouflage their tanks since the factory-painted olive drab didn't blend well with the jungle foliage. Tanks of the Pacific Theater took on a look of their own.

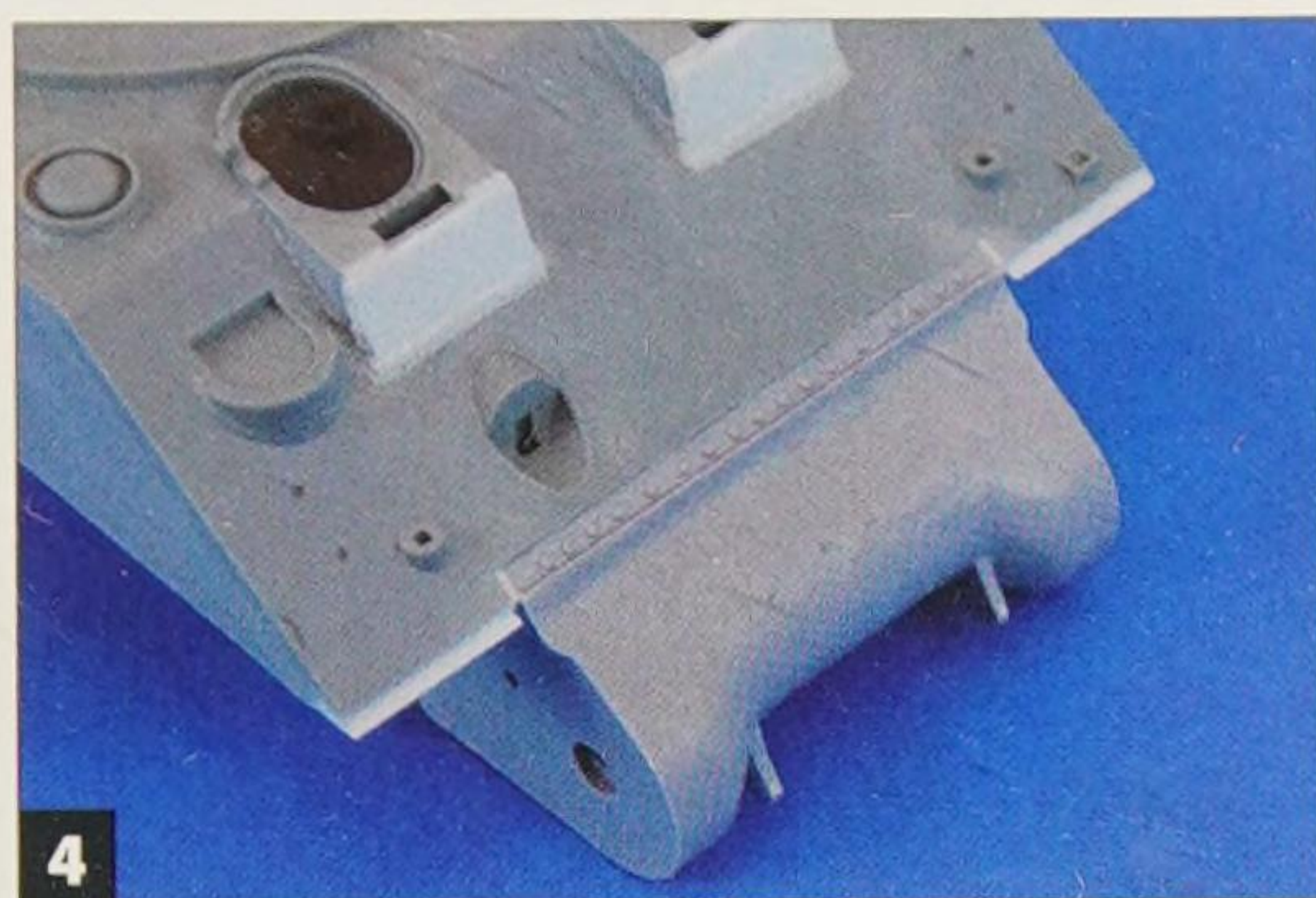
Build-up number three is a Marine M4A2 Sherman being used in the Pacific island-hopping campaigns. From a modeling perspective, Marine Shermans make a great subject. Dragon recently released a great new model of the M4A2s used on Tarawa. With a new kit available, the aftermarket companies quickly came out with

a number of well done add-ons like the wading gear and the wood armor. So this subject allows a modeler to create different versions easily and with great details. Also, the subject is excellent for expanding the groundwork to a completely new terrain and even to make a vignette depicting the battles in the Pacific.

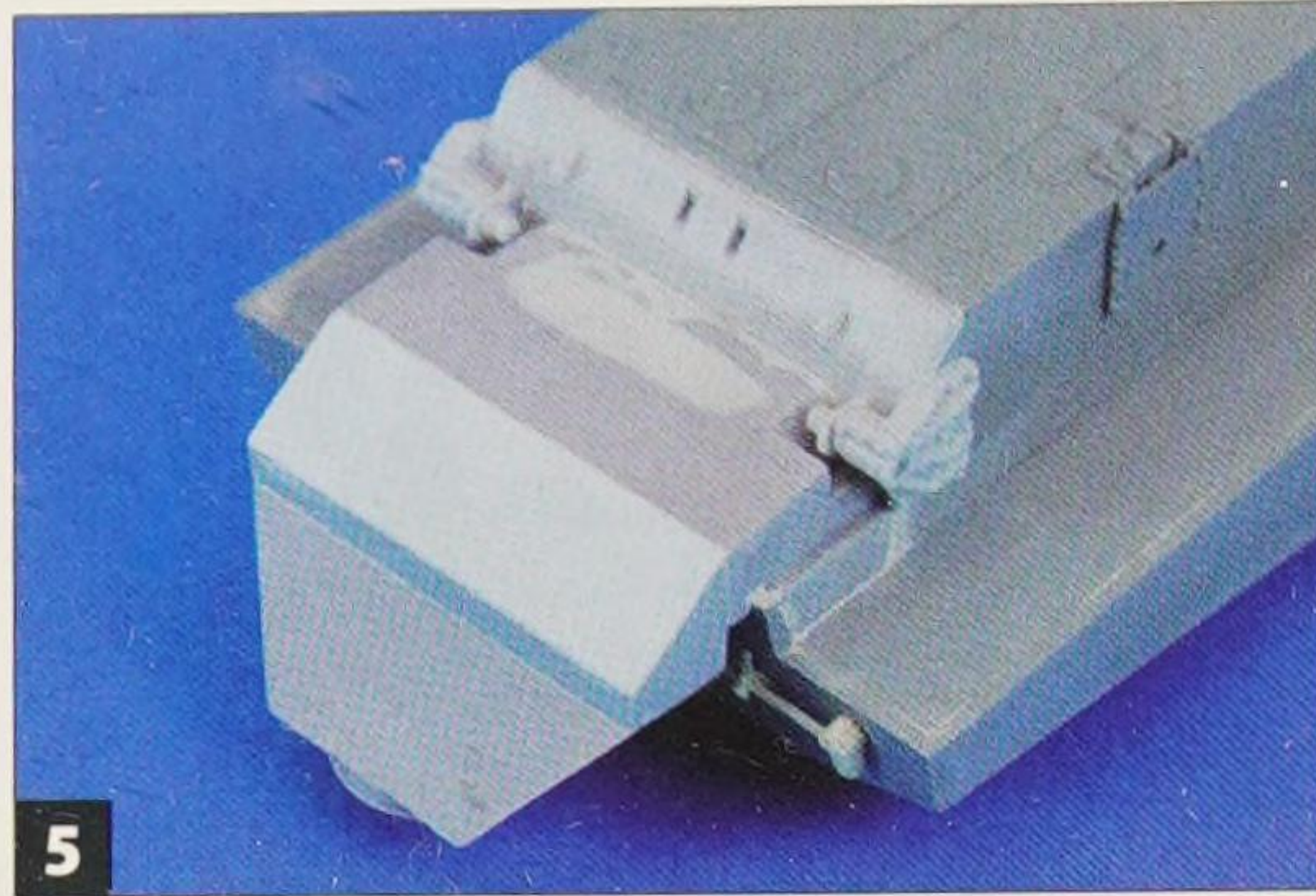
Getting started. Dragon's M4A2 Tarawa is an excellent kit that features most of Dragon's new molding techniques. But rather than simply build it with only a few improvements as I did the Tasca M4A1 in the first chapter, I'm going to load this one with aftermarket items to try to maximize the details. Is this necessary? Probably not. But sometimes it is really fun to totally trick out a model with easy-to-use add-ons and simply enjoy the build.

Construction. The first steps for this kit are to attach the parts necessary to assemble the hull body parts. Tiger Models came out with a replacement rear hull plate for the M4A2, **1**. The biggest change is that this includes a set of cams for the idlers so they can swing and be used for track tension adjustment. Dragon also provides cams, but their design is more for you to position and glue them in place. The Tiger Models design has a longer pin, so you can swing the idlers once the tracks are installed.

This is now the third build in a row where I've used adjustable idlers, so I'm sure by now you get the idea that I strongly recommend doing this for all Sherman models. It really is the easiest way to get the right track tension.



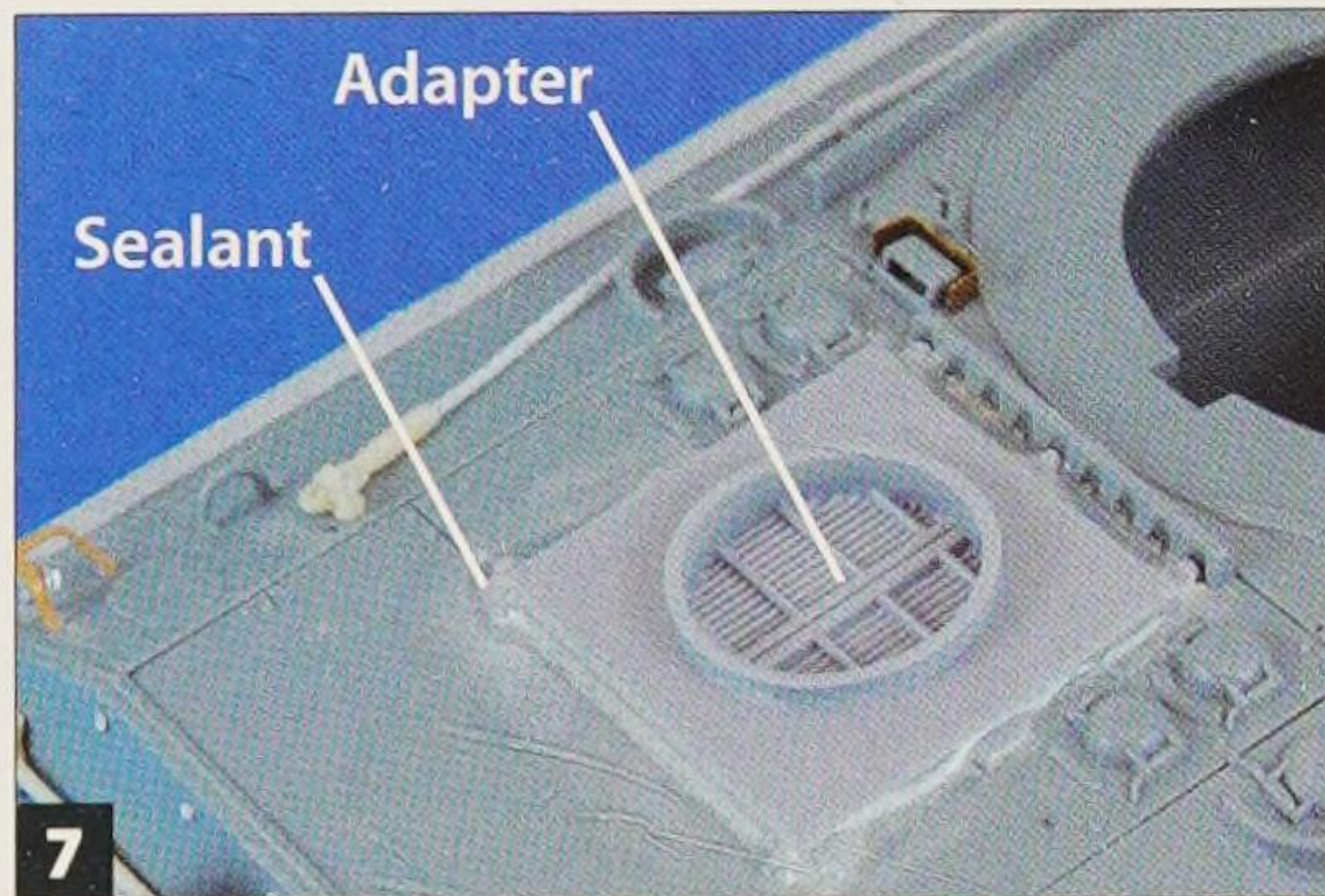
4 A bit of .040" sheet styrene is needed to fill mysterious steps at the front corners that appear where the hull halves meet.



5 Deep wading gear mounts by Tank Workshop fill out the lower hull detail.



6 For a wading Sherman, the intake grille must be replaced with a version that acts as an adaptor for the intake stacks.



7 The look of the sealant around the adaptor is made from a combination of putty, nail polish remover, and epoxy.

Before attaching the upper and lower hulls, there is an important modification that must be made. Dragon made a mistake in the design of the driver's welded hoods: The front plate is too close to the fixed periscope, making the hood's thickness off by about .030". In all candor, if you are not going to show the fixed periscopes opened, then you can probably live with this mistake. But the fix is also pretty easy. I just shaved off the front welds and glued a sheet of .030" plastic to the front of the hoods, **2**. Then I replaced the front welds using the same method I described in the M51 build. I also added the welds along the side and top of the new plastic part. I assume Dragon didn't add these due to molding constraints.

I made two more small modifications to the front hull. The first was to cut off two small rods that are molded to the hull. This is a representation of the headlight cap holder that should actually be a plastic rod mounted to the light guards. The second modification is to remove the snap holder ring around the bow machine gun. Just like the M51 build, I saved a spare Tasca part from a previous model, and I'll use that for better detail.

With these modifications completed, I glued the upper and lower hulls together.

The fit is great. Instead of using the Dragon transmission cover, I switched to one from Tiger Models, **3**. This swap-out replacement part has a little more detail around the attachment brackets. I also used the Tiger Models sprocket supports since the Dragon ones are undersized.

After attaching the transmission housing, I noticed that there is a step where the upper hull extends beyond the lower hull sponson plate. I'm not sure why it is there. You need about a .040"-thick strip of plastic to fill the step, **4**. I used two .020" strips with the lower one extending slightly out to form a small ledge that I can use to attach the front fender.

On the rear of the hull I assembled and fitted the Tankworkshop deep wading gear mounts, **5**. Initially the Marines made this so-called "early style" wading gear in their workshops. These were fabricated out of sheet metal, and in many cases they used 55-gallon oil drums for the wading stacks. I love the look of these!

The Tankworkshop set is well designed but did have some casting issues. I had to do a bit of putty and sanding work as well as laying in a piece of .020" sheet plastic to fix a big depression. None of this was a big deal, but it's better to fix these problems before mounting the parts.

Also on the rear hull is a series of hex-bolt heads. Dragon provides these on its photoetched sheet, but I like to use plastic ones made with a punch and die. You'll want to attach the vertical row just to the left of where Dragon indicates, since they aren't quite centered on the real tank.

I also attached a Formations mallet and the Dragon wrench on the rear hull before attaching the wading gear since access is pretty tight once it's installed.

Instead of attaching the engine intake grilles, I added the adaptor for the front wading stack, **6**. I have searched all over for photos of Shermans with these wading stacks and I've only found one photo with a clear view of the upper hull from the right period. Much to my surprise, only this forward adaptor seems to have had sealant added around its joint to the hull. Later in the war, nearly all gaps like those on the the engine deck itself and the fuel caps would be sealed, but it seems the early ones had sealant only on this part.

The sealant was a goopy product called Bostik that had a tar-like look but seemed to dry to a grayish color. To make this, I first used putty to seal the adaptor, **7**. I used nail polish remover to get a smooth and blended finish on the putty. Then I ran a tiny bead of epoxy over the putty to further simulate the goopy look. The key will be to paint this to get the right final look.

Suspension. Dragon's VVSS suspension (yes I know the last S is for suspension) is nice. About the only thing that needs improvement is the return roller skid, which is too thick. The easiest fix is to buy a set of preformed brass replacements from Lionmarc. You can just glue them in place instead of the Dragon parts, **8**. I also switched the road wheels with a superdetailed set from Tiger Models.

Finally I drilled the four holes on the front of the spring housing just as I had on the M4A1 in the first build-up, **9**. The result is a very nice suspension. The Dragon design allows the wheels to rock up and down. Although this isn't completely correct, if you keep the movement low, the suspension can be used to show the tank driving over uneven terrain.

Before mounting the suspension, I added the row of hex bolts that go along the hull where the transmission cover

attaches. These are visible even with the suspension and tracks installed so it's worth the little extra time to add them.

The fender is a resin part from a Formations set. Dragon provides the fenders in photoetched metal, and my experience is that they can be fragile. I applaud Dragon for offering photoetched parts, but I wish they'd offer plastic ones too.

Wood add-on armor. Tank Workshop makes a nice set of wood add-on armor in resin, **10**. The only problem is that it is designed for the later Sherman hulls with the large hatches. However, you can easily trim the angles to get them to fit. After I cut the edges to the right angles, I redid the wood grain on the edges by dragging the teeth of a small hobby saw across the surface. This gives a wavy series of scratches that looks like wood grain.

Hull details. There aren't many details to add to the hull. On the front hull, Dragon provides a nice set of photoetched light guards that are easy to form by bending them around the handle of a paintbrush. As in the last build-up, I added the small light cap posts from plastic rod and a tiny bit of photoetched chain, **11**.

The tow cable is again from Formations, and I used Tiger Models hull hatches. These are superdetailed and come with the brush guards in resin. They look great with the extra detail on the periscopes, and the spring detail really comes out with painting and weathering.

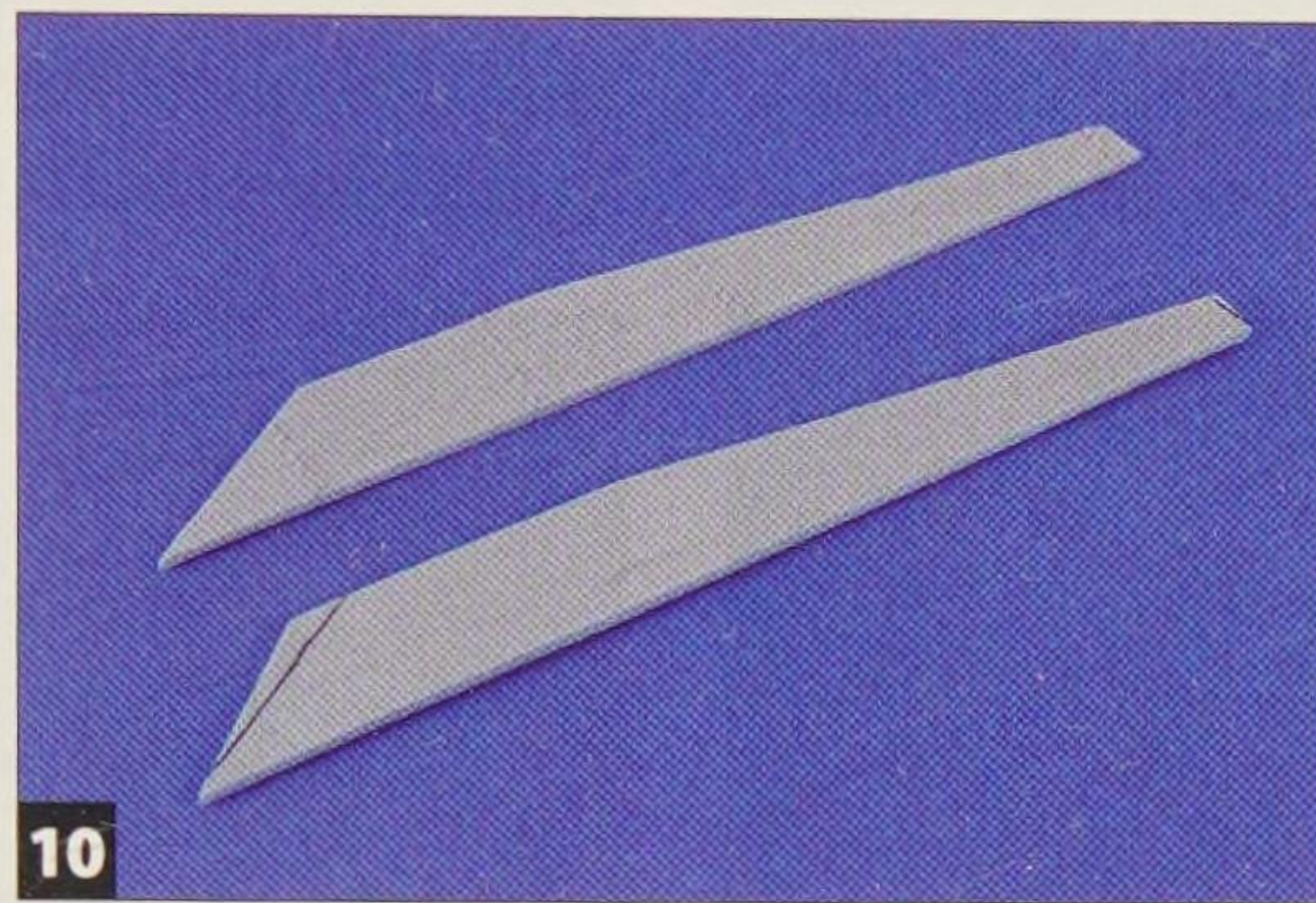
I again used Formations pioneer tools for added detail, **12**. Also, I placed a small photoetched screen over the hole on the rear wading trunk. I saw a photo of a real Sherman in which there appeared to be a screen in there, and if something isn't added, you can see the resin flat spot pretty easily even after the 55-gallon drum is in place. So, I thought this would look a little better either way.

Finally, I added a few water cans on the back. I saw this in a picture and thought that it would be a good choice. Most Marine Shermans do not show much for stowage, so I just wanted something to add a little color and interest.

Turret. Dragon's turret is great with a nice casting texture and good details. But you do have to fill, sand, and retexture the



Road wheels are from Tiger Models. Note the four holes you need to drill in the spring housing just as in the earlier M4A1.



Wood anti-magnetic armor from Tank Workshop fits a different hull. It's easy to correct by resetting the front angle.

seam along the side of the rear bustle. There's no way out of this with plastic parts since you can't mold the bustle in one piece. But in this case I just retextured around the seam since the rest of the turret's casting texture looks good.

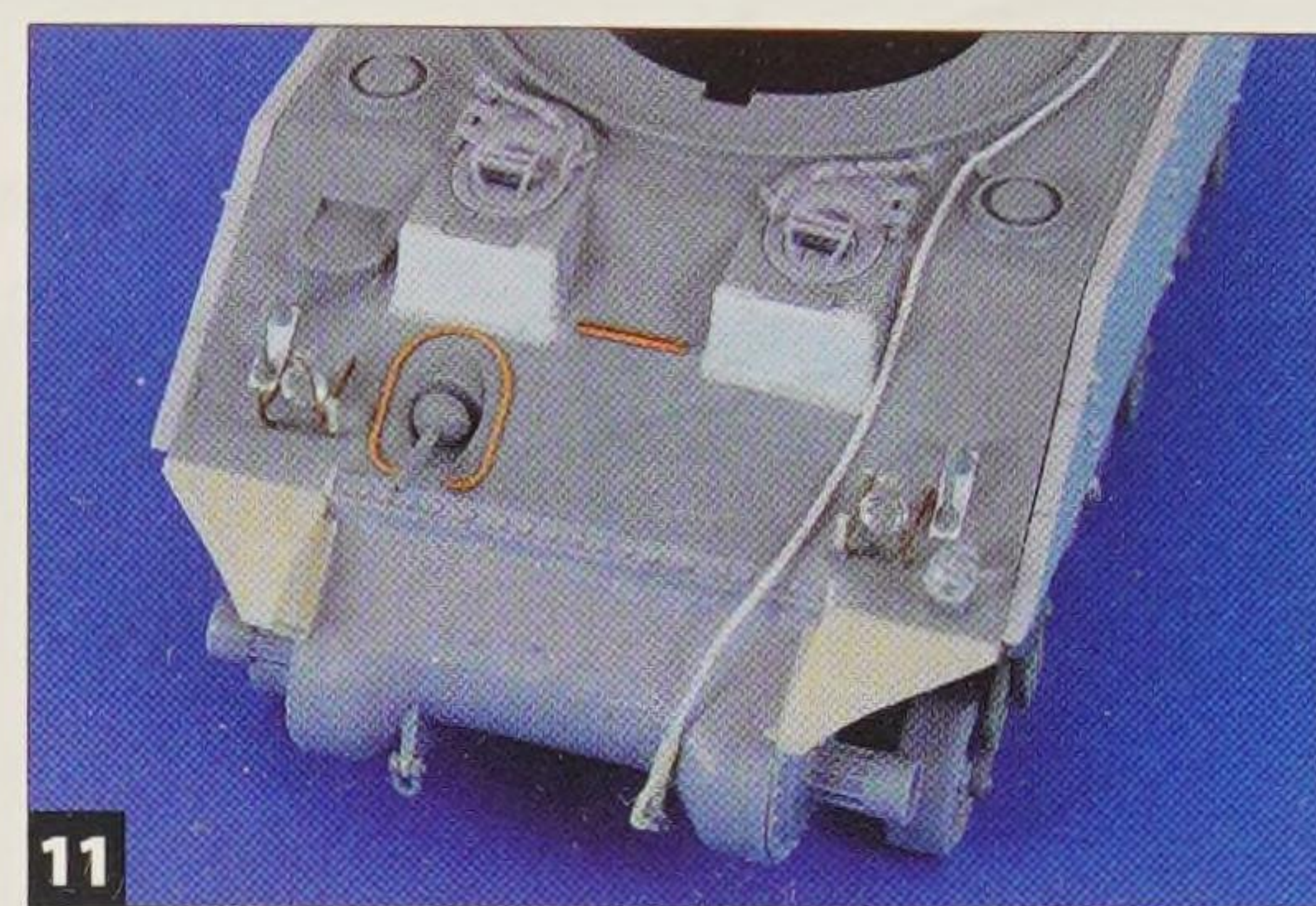
I replaced many of the Dragon turret details with ones from Tiger Models. These superdetailed items add a nice touch. I also replaced the entire gun housing and mantlet with a set from Tiger Models mainly because it comes with a metal barrel. The Dragon barrel is a pretty impressive single-piece mold, but you still have to remove the small mold seam and make sure it's round, so I went the easy route and used a metal barrel, **13**.

One item that I am really impressed with is the Tiger Models commander's split hatch, **14**. The detail is tremendous. The Dragon parts are actually pretty good, but this replacement set is really full of tiny details, and since it's in a highly visible location it's a worthwhile update.

Sadly, it's not very common to see Marine Shermans with the .50-caliber machine gun mounted. I'm not sure why, but my guess is that the commander was too exposed when operating it. In fact, it's actually more common to see the Sherman fully buttoned up when in combat,



The Dragon bogey sets are nice. The brass roller skid is by Lionmarc; the fenders are resin versions from Formations.



Front hull detailing comprises a tow cable, some photoetched chain and light guards, and Tiger Models hatches.

but I couldn't resist leaving the split hatch open, **15**.

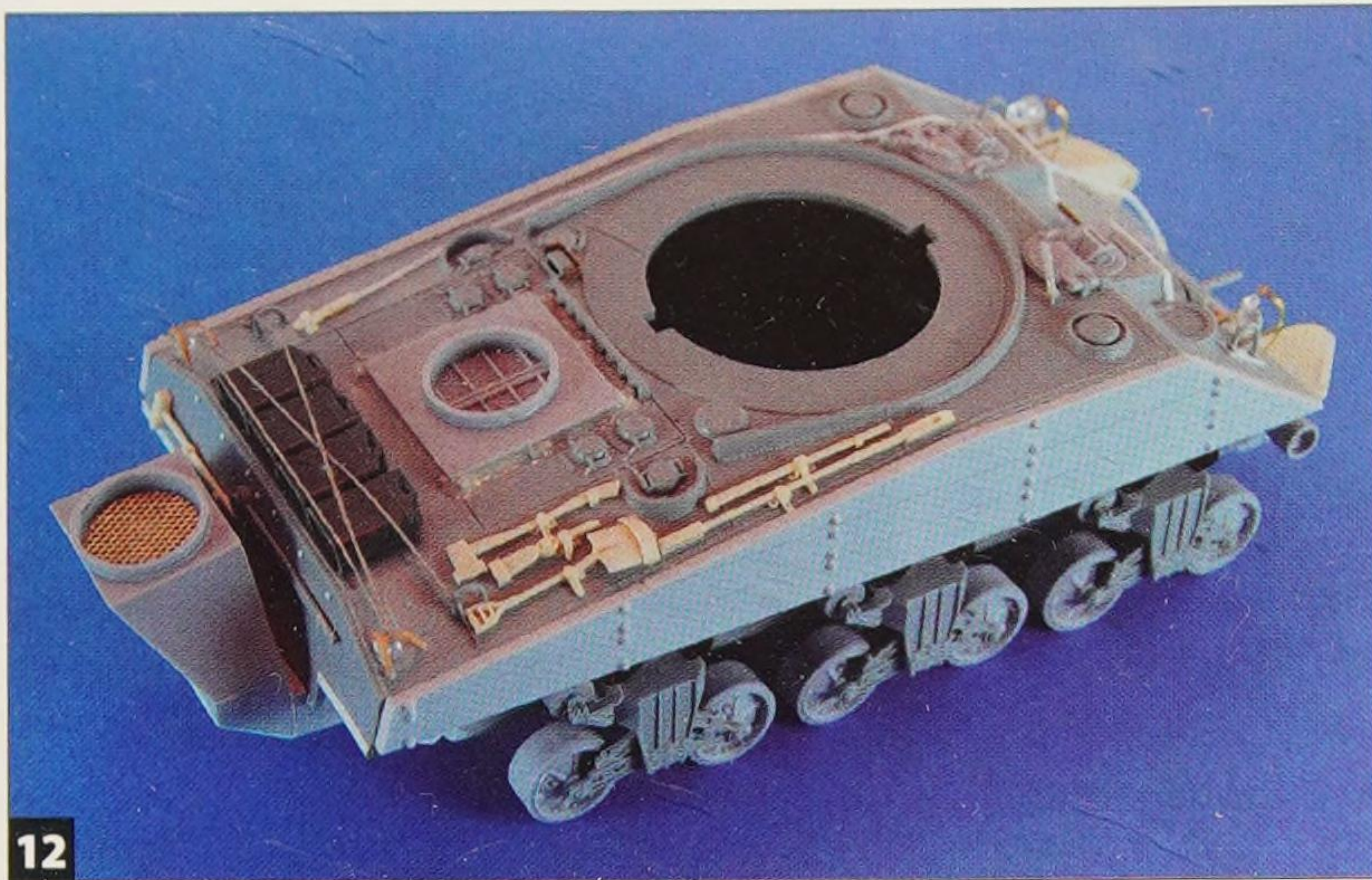
I made a simple commander figure from resin parts from my spares bin.

Painting camouflage. One thing I love about USMC Shermans is that many were camouflaged, **16**. This tank has a three-color scheme that consists of the original Olive Drab plus a medium brown and a light gray.

Unfortunately the photo of it in action in the Concord book *Tank Battles of the Pacific War* is a head-on shot, and the only other photos I could find are of a restored Sherman in a tank museum. At least those photos provide an idea of the colors and a general pattern.

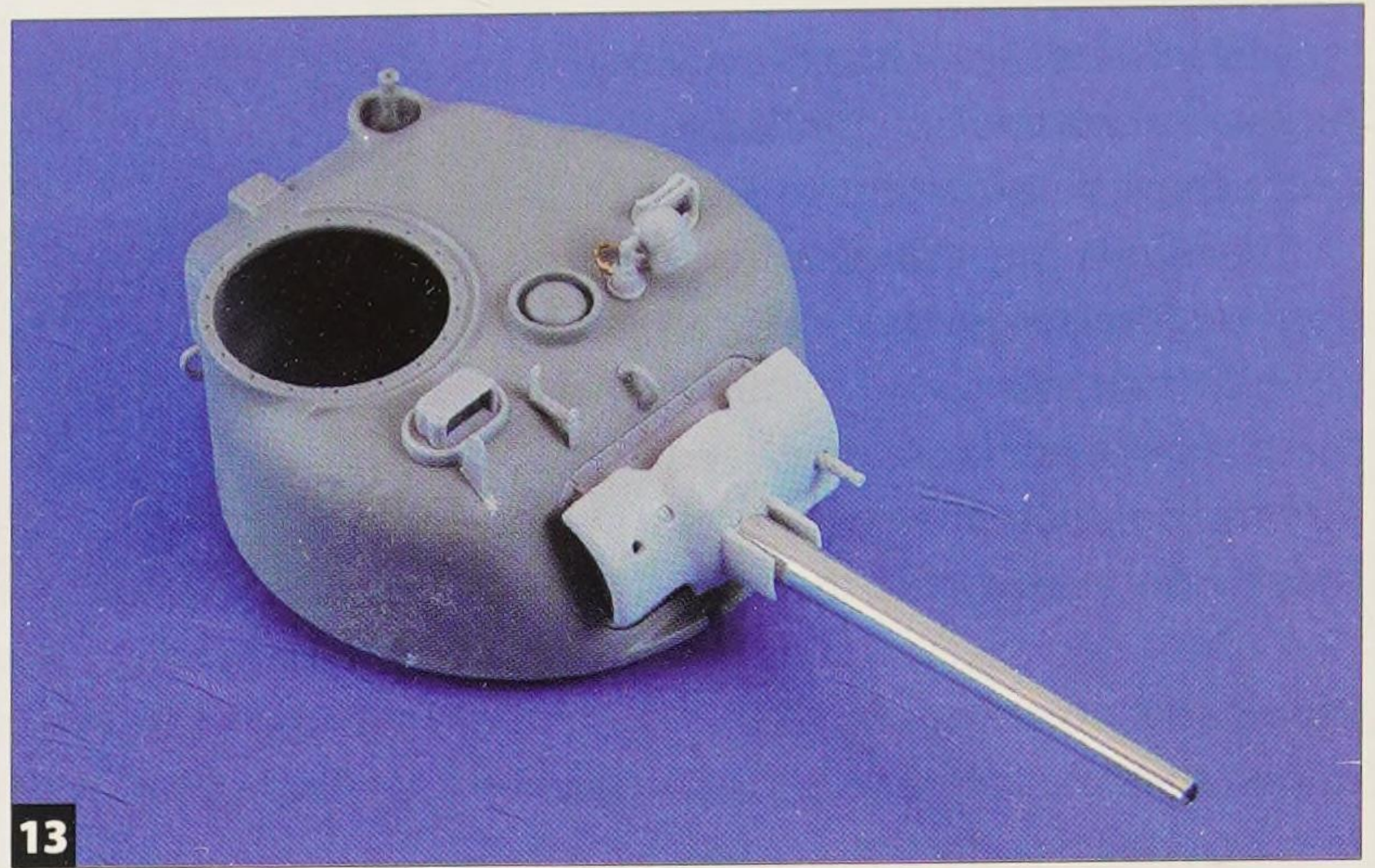
But one unknown is whether or not the lower hull and suspension also had the camouflage scheme. Photos of several of the USMC Shermans show that many did not. This makes sense, since painting the scheme requires a lot of work and the dust build-up would obscure it anyway.

Thus, I chose to not extend the three-color scheme to the lower hull and suspension. From a modeling perspective it's almost irrelevant, since after the weathering is applied, it'll be pretty much covered just like in the real tank.



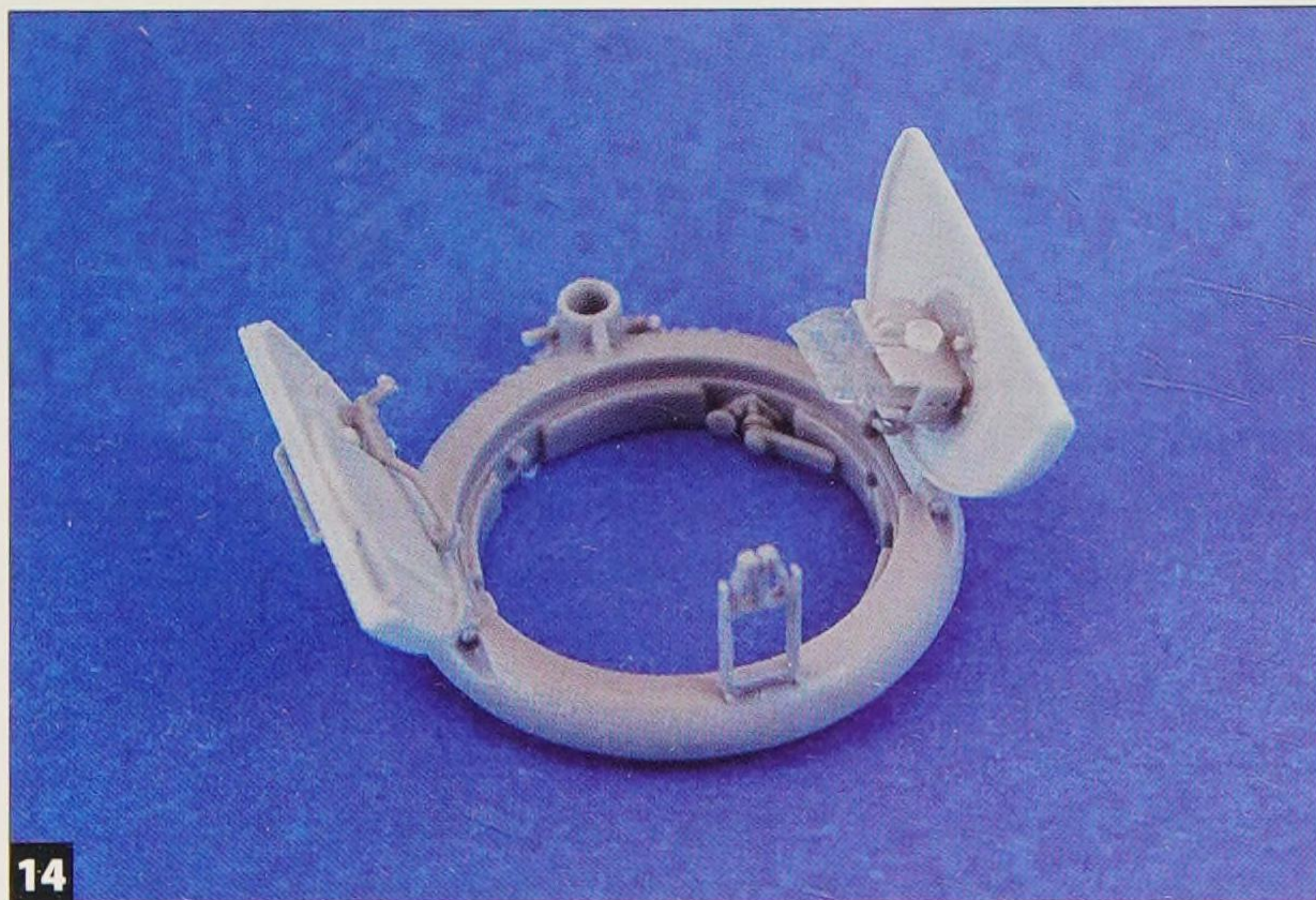
12

Formations pioneer tools populate the rear hull top along with lots of water cans. A screen hides the wading stack interior.



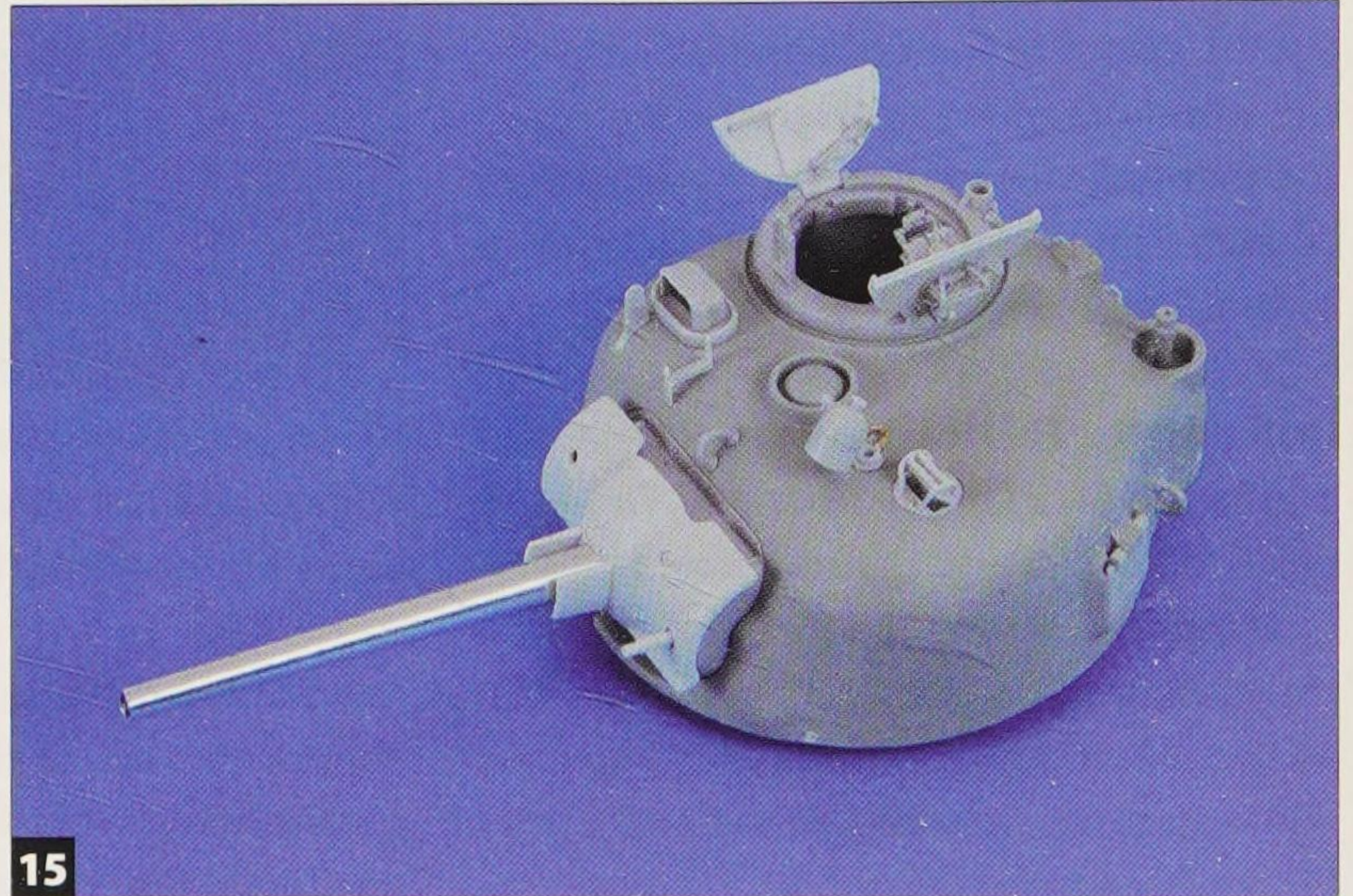
13

Even though the Dragon barrel is a nice, one-piece shape, Tiger Model's metal barrel is still easier—no molding seam to remove.



14

Tiger Model's commander's hatch is exceptionally well detailed. Since the hatch is so visible, it was worth a change.



15

Many of the kit turret details have been replaced by items from Tiger Models.

When I paint a multi-colored scheme, I like to start with the lightest color first. This is because it is much easier to touch up a dark color over a light one than the other way around. So I first painted the model in Model Master Dark Gull Gray as a base coat. I didn't worry about the lower hull, suspension, or commander's hatch since I know those areas will be in a different color. Then I panel-faded the model with Model Master Camouflage Gray.

Once the paint dried, I sketched the camo scheme outline with a pencil to make it easier to airbrush the other colors. I airbrushed flat black on the areas that will be brown and green. Once those colors were dry, I panel-faded Model Master Military Brown and then gave the model a heavy flat coat, **17**. After letting it dry for 24 hours, I used a brush to paint the hard edge lines. Then I used a lightened version of Military Brown to panel fade again. The great thing about this process is that the last panel fading helps to blend out

any noticeable brush marks. I follow this process because I hate to mask. It is time consuming, and I almost always end up knocking off some of the small details on the model.

I repeated this process for the green areas using Olive Drab and Faded Olive Drab over the flat black, **18**. Then I dry-brushed both the brown and green areas with Model Master Afrika Dunkelgrau.

Markings, details, and weathering.

Most USMC tanks didn't carry much in the way of markings. The few photos I have appear to show a number inside a triangle on the turret, and that's all I could see. I dug out a white triangle and number from my spares bin. I painted the few details (pioneer tools, water cans, tow cable) in the same manner that I did on the M4A1 in the first chapter. I also painted the area around the front wading stacks where I placed the sealant in Dark Gull Gray. After another flat coat, I gave the model a wash

with thinned Raw Umber oil paint just as I had for the M4A1 and M51.

I lightened the lower parts of the tank using thinned Tamiya Buff and then thinned Tamiya Deck Tan as I had in the M51 build-up in the last chapter. Finally, I added a very small amount of MIG Pigment Beach Sand to the lower parts of the tank and the suspension, **19**.

The tracks come with the kit, and I removed two links. They were painted and weathered in the same way as the tracks on the M51 in the last build-up. As with the two previous models, I used the adjustable idlers to get the correct tension. In this case, I applied a small amount of CA glue to the top of the three return rollers so the tracks would sit correctly.

Making a small vignette. In the last two build-ups, I first made a simple base and then a slightly more-complicated base. So for this build-up, I want to take it another step and make a small vignette. Since



16

Pacific Shermans were often painted in camouflage. Put down a dark gray base followed by panel fading with a lighter gray.



17

Areas to be brown and green should have a flat black base. Cover everything with a flat coat.



18

Brown goes in next, followed by panel fading with a lighter version of the brown. Same goes for the green—and no masking!



19

The tank is done. It just needs a beach to invade!

the Sherman still has its wading gear, I thought it would make sense to build a beach assault scene with the tank supporting infantry who are about to scale a short seawall. This was a pretty common scene in the Pacific and adding some infantry will help balance out the Sherman which only has the commander just barely poking his head above the hatches.

Turns out making just such a scene is pretty easy since Verlinden makes a couple of very helpful items. First off, they make a set of palm tree seawalls, each of which is just a single big casting. They also make an easy-to-assemble palm tree.

To make the base, I again started with a sheet of $\frac{1}{8}$ " styrene. I settled on dimensions of 7" x 8.5". The 7" measure was chosen because that is the width the styrene sheet comes in and, I could make the base by just making a single saw cut across the sheet. Unless you have a specific reason to do otherwise, I highly recommend keeping it simple.

But I didn't want the base to be flat since beaches typically have some slope. For a gentle slope, a convenient method is to simply glue a series of 0.060"-thick sheets of plastic to the base, in steps, **20**. Think of it like a contour map. Once the sand groundwork is placed over it, then steps will not be visible and this is a quick and strong way to make the slope. Why 0.060" sheet? Because I've found that it is the thickest sheet I can cut with a household scissors. By using a scissors, I can cut out the sheets in minutes and assemble the whole base very quickly.

Once the base was done, I placed the seawall on it and adjusted its position. My main criteria was to adjust the placement so I would be able to avoid the vertical supports when I cut the wall to fit on the base. Again, unless you have another overriding reason, keep it simple.

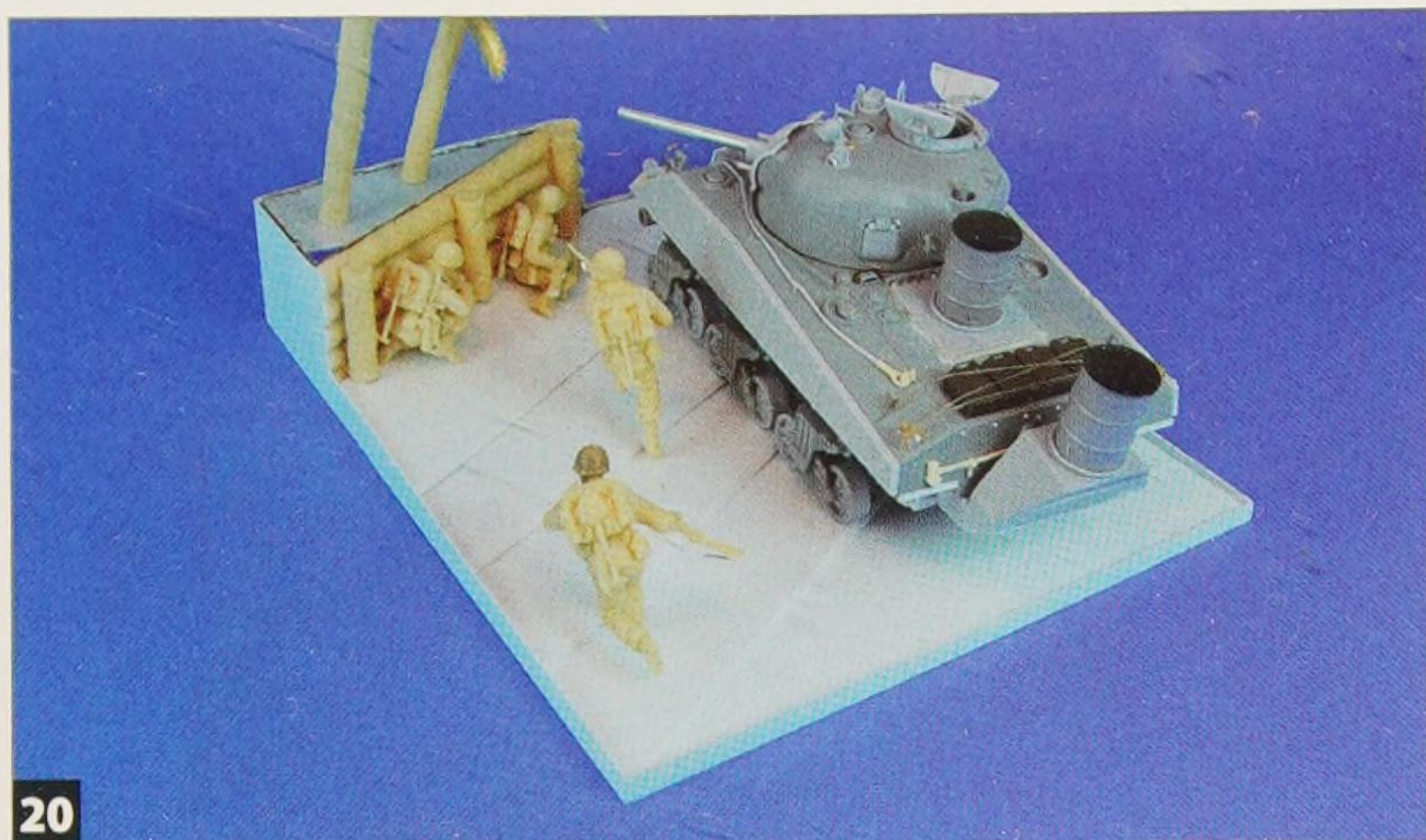
I cut the seawall to the proper length and angle using my motor tool with a high-speed cutting disk.

When cutting plastic with a motor tool, use protective eye wear and a breathing mask!

Once I glued the seawall in place, I used a piece of polyurethane foam for the upper level. This piece is from an old sheet of refrigerator insulation I bought at a hardware store, but you can also buy this type of foam at the local art supply store in the fake plant arrangement section. Place all the components on the base to check the layout.

Like the M51 base, I sheathed the whole base in 0.020" sheet plastic to give it a more finished look.

Palm trees. The Verlinden palm tree set is one of my favorites and I've used it many times over as you can see in the gallery, **21**. Recently Verlinden changed its photoetching, and the new brass leaves look really nice. One reason I like their palm tree is that it is tall. This allows you to cut it



20 Layer sheet styrene to give the beach contours and place the seawall so you avoid an awkward cut into any of the vertical supports.



21 The palm trees are Verlinden products with brass leaves. The seawall and tree trunks are painted Khakibraun, and the leaves are Sand over Lime Green.



22 Two sets of Verlinden infantry including assault troops and a grenade thrower add action to the scene.



23 The finished scene puts a lot of drama in such a compact space, yet shows off all the extra detail work that went into this project.

about a third of the way up from the base and make two trees! There are enough leaves that you can get by so it's a bonus to not have to buy two sets.

I have a number of palms in my yard, so I have the opportunity to study the leaf arrangement. The best way to simulate the leaves is to use your fingers to bend the leaves into a V-shape facing upward (not downward as you might first expect). Then use your fingers to give the leaves a drooping curve. This will give the best representation of real palms.

I painted both the seawall and the palm tree trunk with Model Master Afrika Khakibraun and then dry-brushed them with Model Master Sand. The leaves are a lime green and are also dry-brushed with Model Master Sand. All of these items have a light wash of Raw Umber oil paint to bring out their details.

Infantry. For the infantry assaulting the sea wall, I chose two Verlinden sets, **22**. I like these figures for their action poses. I was particularly intrigued by the figure pulling

the pin on a grenade since his body position could represent a soldier up against the seawall. I also like the two running figures who look like they're making a full assault under fire. Having strong action poses adds drama to this small scene. The figures are mostly assembled from the box with the addition of lead-foil gun straps.

I also followed colors in the box photos since they matched those in the reference books I have on uniforms. The base color is Model Master Faded Olive Drab with the packs and details painted in Model Master Afrika Dunkelgrau. I dry-brushed these with Model Master Sand and painted the faces and hands in the same way as in the M4A1 build-up in the first chapter.

Sand. I made the sand using the same methods as with the terrain in the M51 build-up. However, this time I used much more sand so that when dry, it had a very wet and sandy look. Since this is supposed to be wet beach sand, I made sure to press the tracks deep into the sand. I then built up a small ridge around the

tracks and their impressions. I also used the legs from an old figure to make the footprints for the guys running and also up to and around those by the wall. Once the groundwork was fully dry, I added a light wash of Raw Umber oil paint to the track impressions and footprints to make them more visible and give an impression of slightly wet sand.

In the upper area behind the wall and on the lower area around the wall, I added some green clumps from Woodland Scenics. This represents the stuff that falls off the palms and also the gunk that gets washed ashore. Lastly, I added the three palm logs. These I made from the leftover parts of the seawall. I painted them at the same time as the seawall and palm trees.

With that, this build-up is complete, **23**. In many ways, even with all of the resin updates and conversion parts, this model was still easier to make than the M51. The vignette was also very simple, and while it obviously takes a little more time to add the infantry and the base, the actual work is pretty straightforward.

For the most-accurate Sherman, reach for a RESIN KIT

U.S. Army M4A3(76) with sandbags, late European Theater

The ultimate Sherman model for me is the M4A3(76) with sandbag armor that could be seen operating throughout northwest Europe near the end of World War II. These Shermans have a dramatic look with the big piles of sandbags on the hull and turret, and are often modeled with lots of stowage and even a few soldiers catching a ride on the back.



Formations offers a wide variety of Sherman components in cast resin, allowing modelers to accurately create several versions of the tanks. Working with resin requires different techniques compared to plastic, but the methods are not difficult to master.

4



Resin components and detail parts allowed building this model of a U.S. Army M4A3 as it would have appeared in Europe late in World War II. The sandbags (from Legends) and figures give the Sherman model the appearance of a battle-tested tank.

For this, I'm going to use mainly resin parts because they offer extreme levels of detail. I'll leave open all of the hatches, so most of the crew will be visible and the model will have a lot going on.

There are many ways to go about making this model. But I'm going to use resin parts from Formations. Formations made a name for itself by producing top-quality resin parts for all types of Shermans. Today, they have such an extensive product line that you can just about build a complete Sherman by combining their different parts.

The only things you need to add are a suspension, tracks, the light guards and a .50-caliber machine gun. For the sandbags, I'm going to use a great set from a company called Legends Productions.

I plan to use resin figures and make a reasonably complex diorama to display this model.

Getting started. Many people are intimidated by resin kits. When the resin aftermarket business first got started, there were a lot of companies that brought out

a ton of parts, and many were of pretty low quality. So it is natural that some people have reservations. But today, the Internet provides a great resource for researching the different options and selecting high-quality parts.

Formations is the top of the line with excellent details and few, if any, casting issues. The company's resin is soft, so it's easy to use, and no special tools are needed. The upside of using resin parts is that not only is the detail good, but usually there are fewer pieces since many details can be cast into a single part. So in many ways, the construction aspects are easier than with a plastic kit.

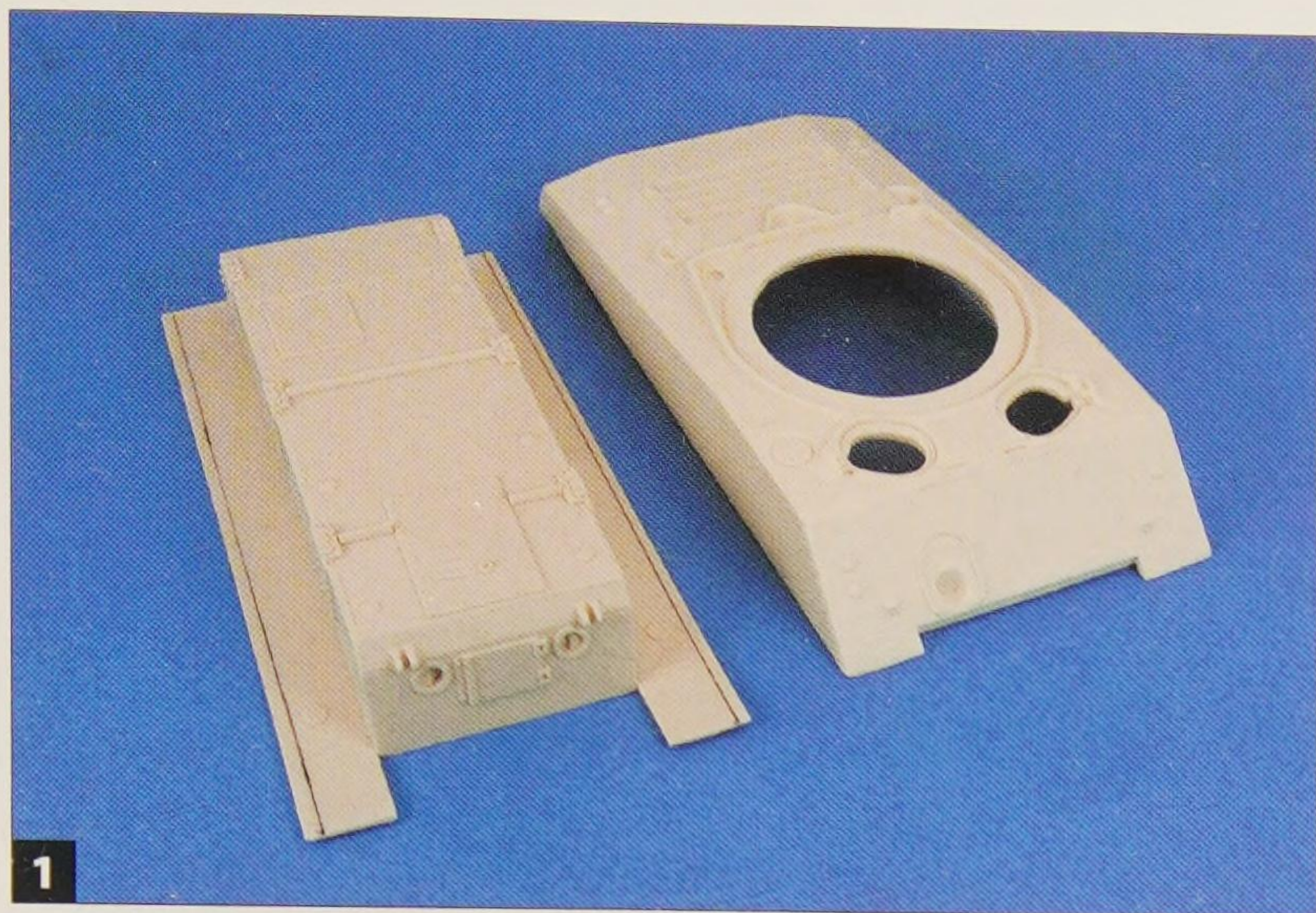
Construction. Well-designed resin parts take advantage of casting methods to integrate a lot of parts into single items to make assembly easier. The Formations lower hull is a good example. It's one big casting with the rear plate already attached. So all you really need to do is clean up the casting gates, and it's ready for use. But one modification is necessary: Formations doesn't make its upper and

lower hull specifically to fit each other, so you do need to trim about $\frac{1}{16}$ " off the side of each sponson. It's easy since, again, the resin is relatively soft, **1**.

The same is true for the upper hull. The most notable part of the upper hull is the excellent weld details and the details inside the hull hatch openings. There is also very nice front glacis detail, but all of that will be covered by the sandbags.

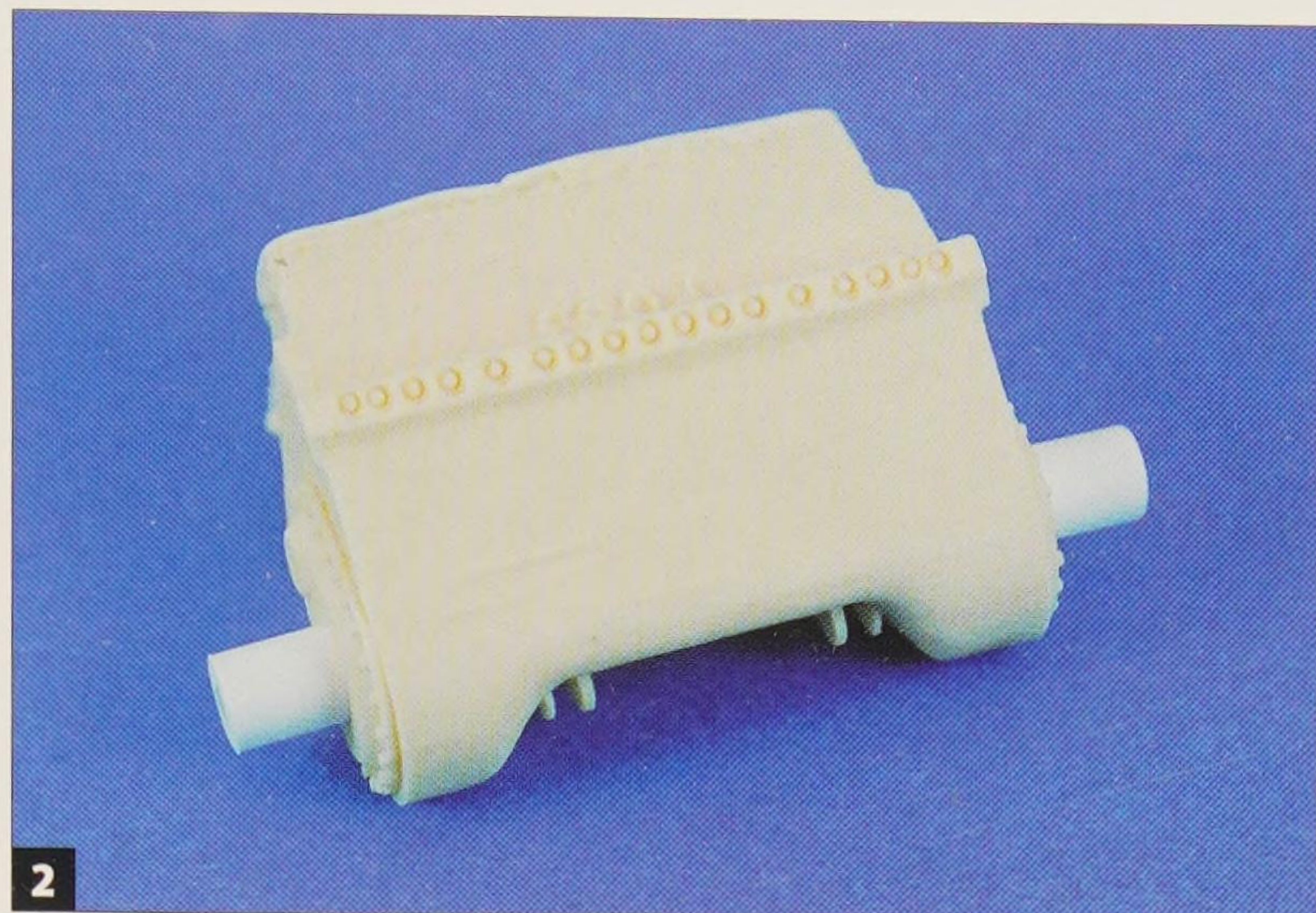
The transmission cover is pretty much the same thing. One smart move by Formations prevents you from having to remove the large pour block since it's designed to sit inside the lower hull. This means cleanup is quick.

Formations provides sprocket mounts for Tamiya and Dragon parts, but I'm going to use some leftover Tasca sprockets from the M4A1 in the first build-up. They need a much larger support post, so I drilled out a $\frac{1}{4}$ " hole in the transmission housing and glued two pieces of plastic tubing to work, **2**. The nice thing about using plastic is that later I'll be able to glue the sprockets to the posts using strong liquid glue.



1

Trim about $\frac{1}{16}$ " off the side of each sponson to allow the upper and lower hull sections to fit tightly with each other.



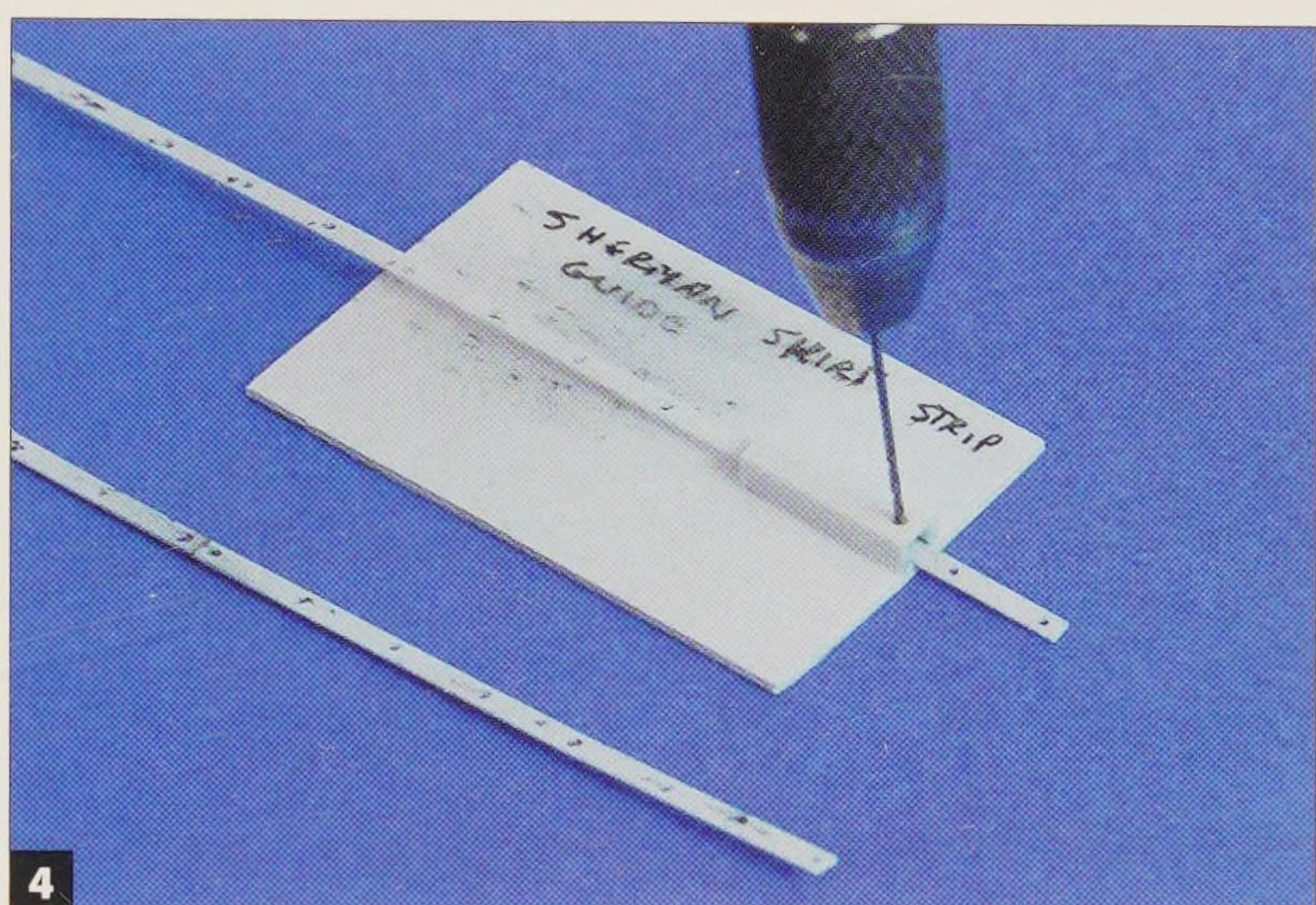
2

Add two pieces of plastic tubing to the transmission cover. These will hold the new sprockets.



3

The Legends sandbag casting requires some trimming to get it to fit properly on the Formations hull.



4

Make the sand skirt bolt strip from .010" x .060" styrene. A jig made it easier to locate and drill the required holes in the strip.

With the small cleanup and modifications complete, I glued the three parts together. I still needed some putty and sanding on the underside of the sponsons, but that is pretty simple work. What impressed me the most is that all of the work up to this point took only two hours!

Hull sandbags. Now I added the hull sandbags. These are from a Legends set designed for the Dragon kit so there are some fit issues due to differences in the hulls. Mostly this was an issue with the three parts on the front glacis, so I took my time and trimmed and shaved the parts until the fit was decent, **3**.

After gluing all of the pieces in place, there were still a number of gaps. Those needed to be filled or else the sandbags would appear to be floating on the model. I again turned to my favorite trick of using nail polish remover to thin and smooth the putty once I had it in place. After this

all dried, I went back with a knife and trimmed and shaved all around the bags so they would look like they are just resting on the hull. This is a bit tedious but it still only took me a couple hours.

One last item is to add the sand skirt bolt strip that runs along the bottom of the upper hull, **4**. This is best made out of precut strips of .060" wide by .010" thick plastic. I made a small jig for locating the holes and used the photoetched parts on the Dragon M4A2 in the last chapter as a guide for where to place the holes. It is not as hard as it looks, but you do have to go slow to ensure the holes are lined up.

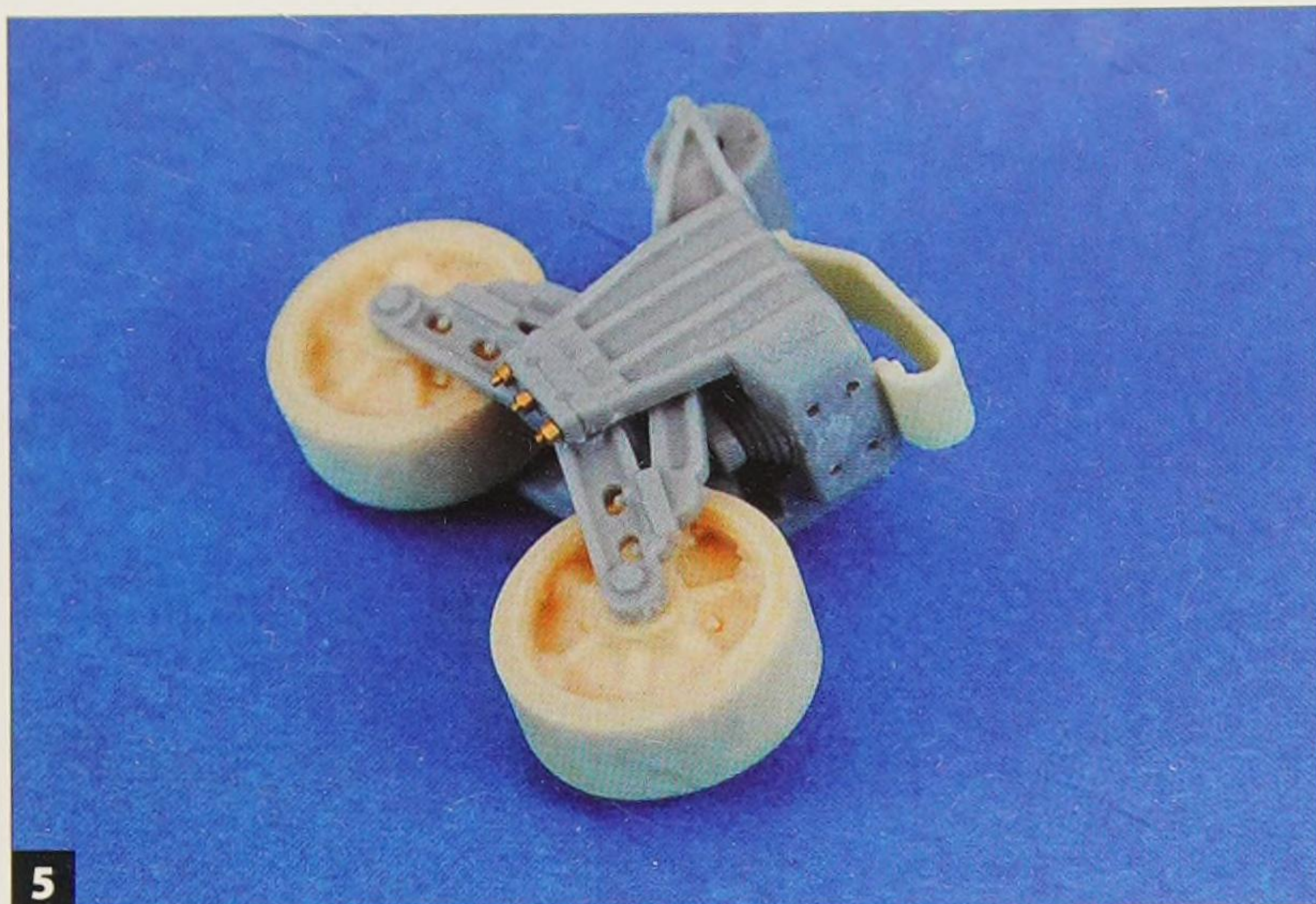
Suspension. In the first build-up of the Tasca M4A1, I noted that Tasca also sells its suspension set as separate kits. Without a doubt this is the easiest and most-accurate solution to obtaining a suspension for this build. But since I already built it in the M4A1 chapter, I thought it would be more

interesting to use a very old suspension and upgrade it.

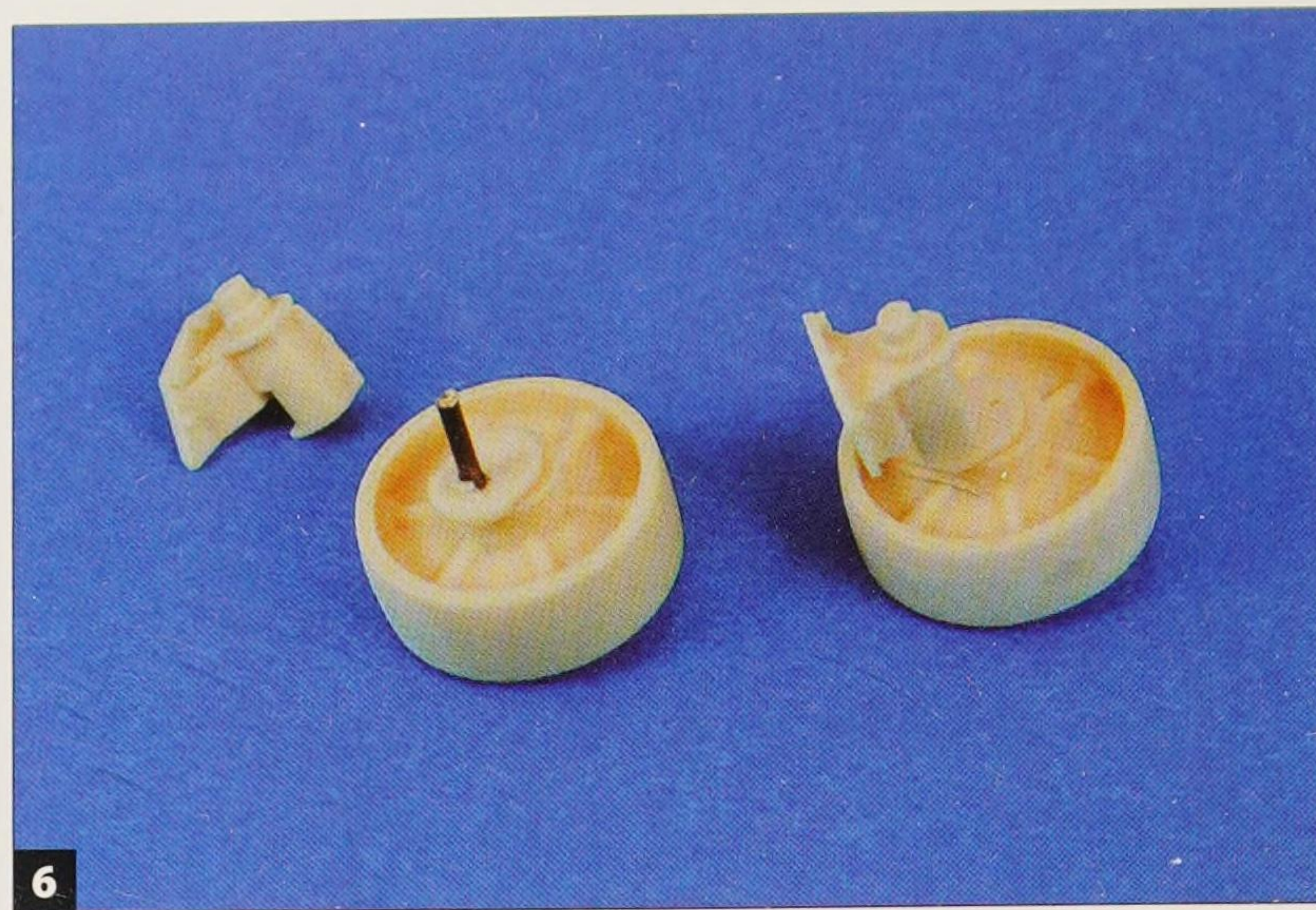
If you end up hooked on Shermans, then the odds are you'll accumulate a lot of leftover parts. Many of the plastic kit manufacturers are quite generous in providing multiple options in their kits, and alternate suspension parts are common.

So for this model, I am going to update a very old Dragon VVSS set. The older sets aren't nearly as nice as the new ones like the set included in the M4A2 from the last chapter, but they are still perfectly usable with a few improvements.

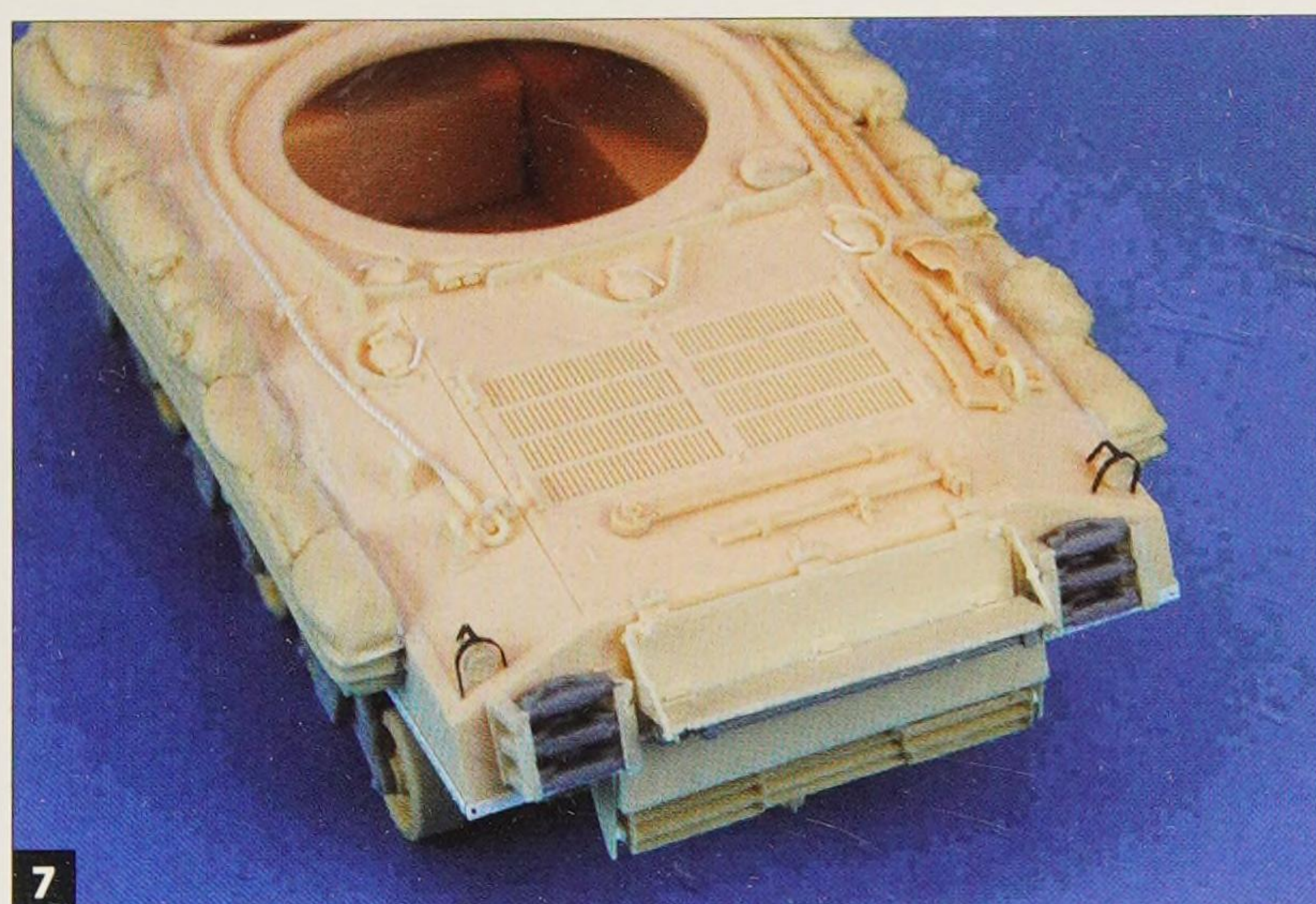
I made four upgrades, **5**. I replaced the road wheels with a nice replacement set from Formations. This resin set is easy to use since you just clean off the pour block and drill out the center hole. I also used replacement return roller skids from Formations. Obviously these aren't quite as simple to use as the drop-on brass skids from the last chapters. However, they



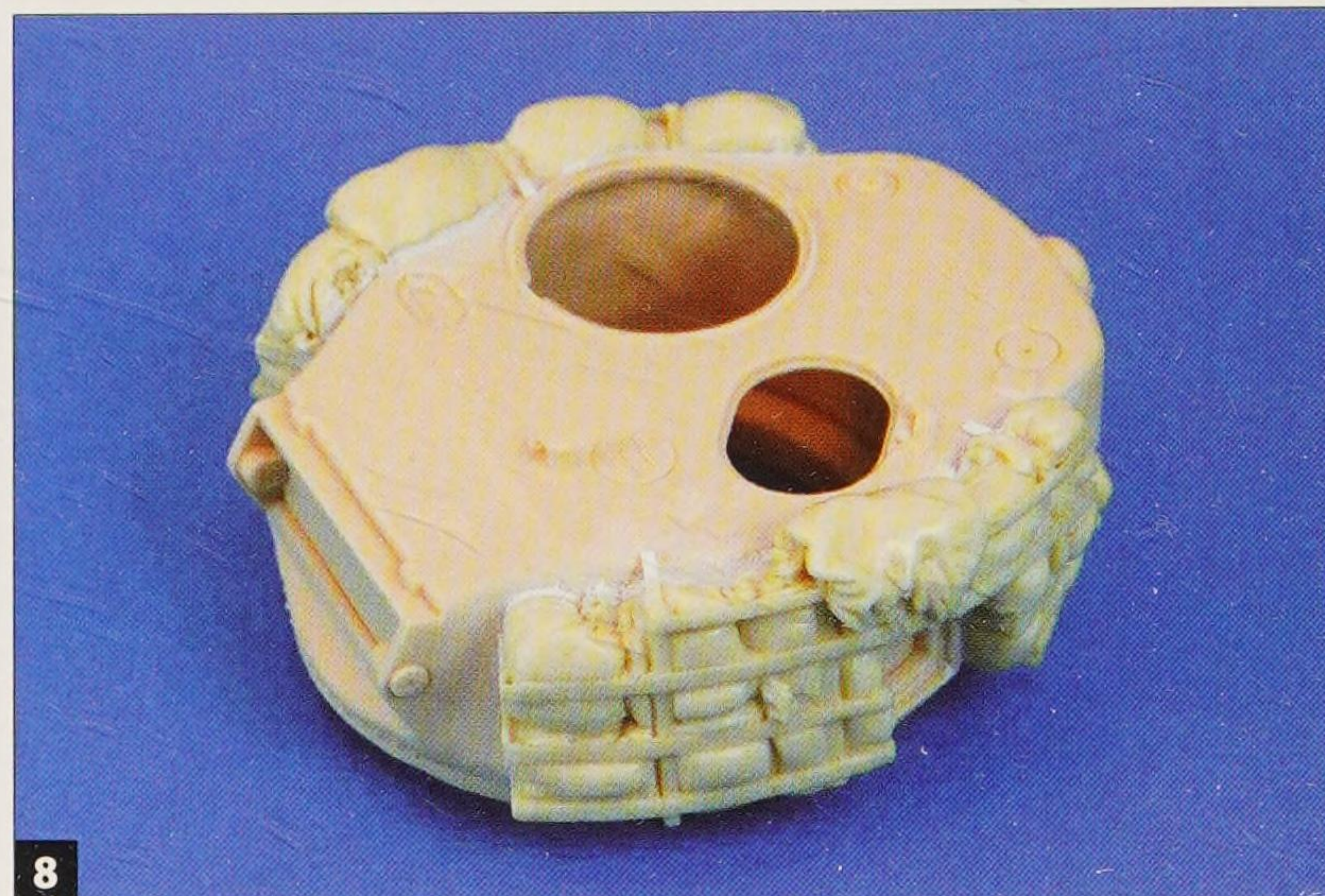
5 The suspension bogies are from an older Dragon VVSS set, upgraded with resin wheels and brass bolt details.



6 Adding a brass rod to each idler mount allows swinging the idler to match the tension of the tracks.



7 Now's the time to add detail items to the hull, including tools, stowage rack, and track-link holders.



8 Add the sandbag castings to the turret. Putty and nail polish remover will hide any gaps.

aren't much harder since you only have to score them slightly to get them off the pour blocks. Their advantage is that the hex bolt head details are more defined, and that adds a nice touch of extra detail. Once again I drilled out the four holes on the front face of the main spring housing.

Finally, I added the hex and bolts to the bottom of the main housing. The older Sherman sets didn't include these for some reason. But Lionmarc makes a super set of small brass parts that you just glue in place. There are six per bogie and six bogies for a total of 36 little parts. It took only about 30 minutes to glue them all in place. So with a little effort and a couple of aftermarket items, it's possible to upgrade an old set to a nicely detailed level. Whether this is better than buying a new set is just a matter of preference.

I also made a modification to the idlers and mounts, **6**. Basically, the Formations idler mounts come with a cam system

much like the one in the Dragon M4A2 in the last chapter. I made the same modification of adding a brass rod, so I can swing the idler to adjust the tracks' tension.

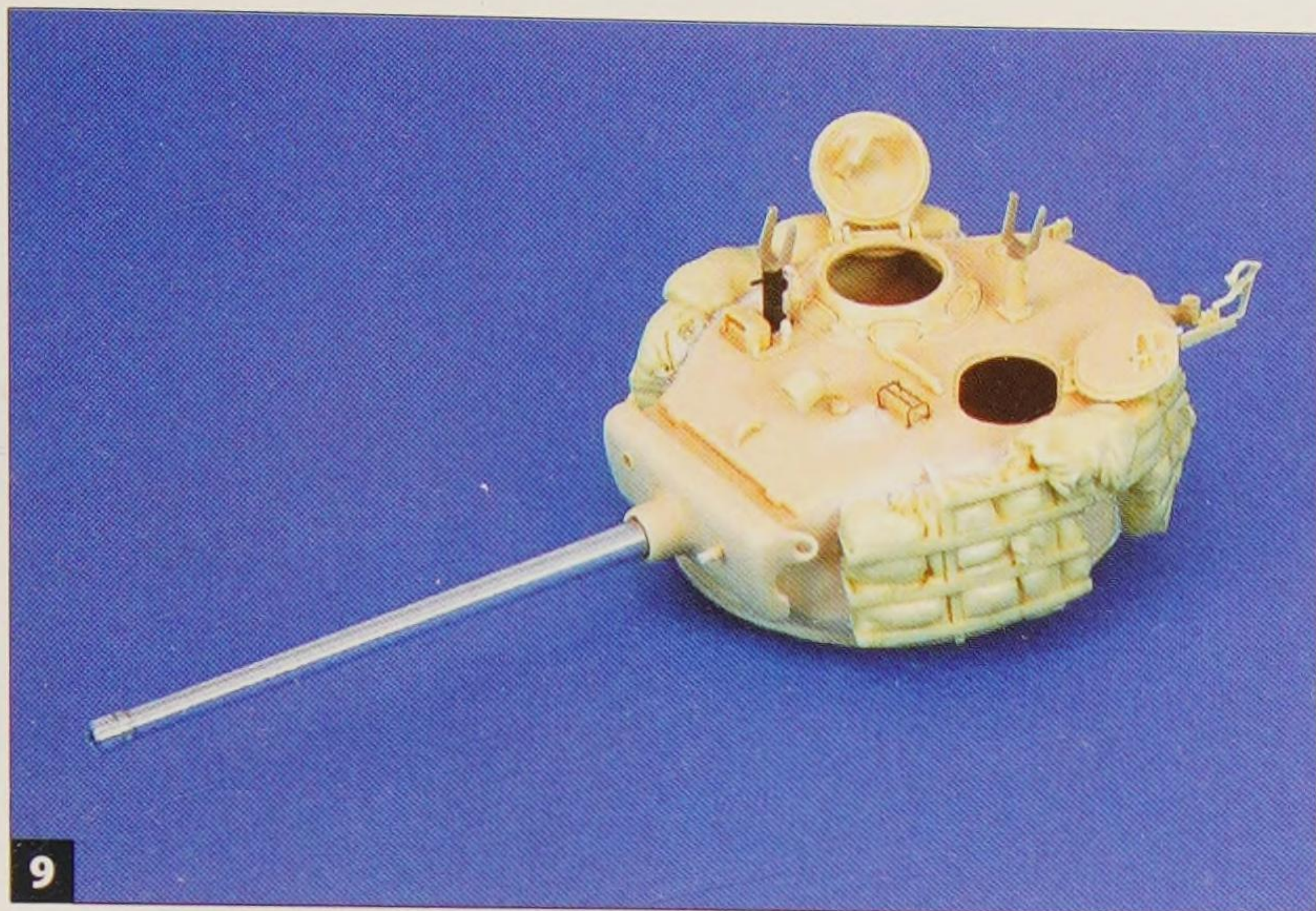
Hull details. To finish up the hull, I added some of the small items and the pioneer tools, which are the same ones from Formations that I used in the previous chapters, **7**. On the back is a very nice stowage rack and two spare track-link holders. The track links are extras from the link-to-link tracks that will go on this model and are discussed later. The light guards are nice photoetched parts from an Eduard set called U.S. Light Guards.

Turret. Construction of the turret pretty well matched the sequence of the hull. The Formations turret takes advantage of being cast in resin as a single piece so you don't have to fill, sand, and retexture along the rear bustle. There is a separate

mounting ring that is glued underneath, but it can't be seen once the turret is on the hull so you can avoid filling under there if you wish.

The sandbags again have some small fit issues, and trimming along with an immersion in some hot water helps. But once again, it's putty and nail polish remover to the rescue, **8**. But a key point to keep in mind is that the mounting brackets must actually reach the hull, otherwise the whole thing will look glued on. For the hull, this wasn't much of an issue since the side brackets were mounted to the flat sides. But here there are some notable gaps, for which I used some strip plastic as filler.

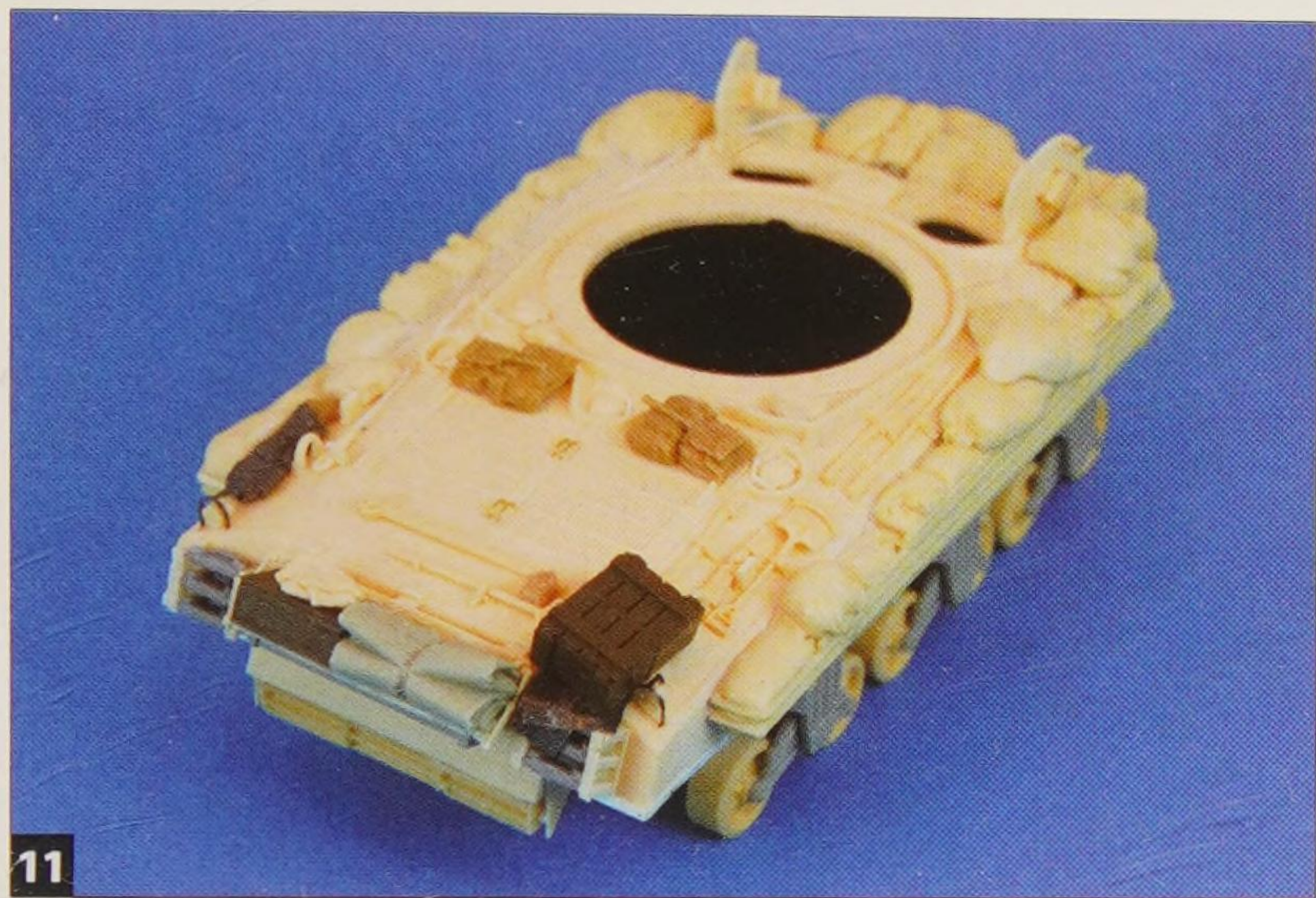
With the sandbags in place, I proceeded to add the remaining details, **9**. About all I added, in addition to what comes in the Formations set, are the photoetched brush guards, which came from the Dragon M51 kit a few chapters back, and the



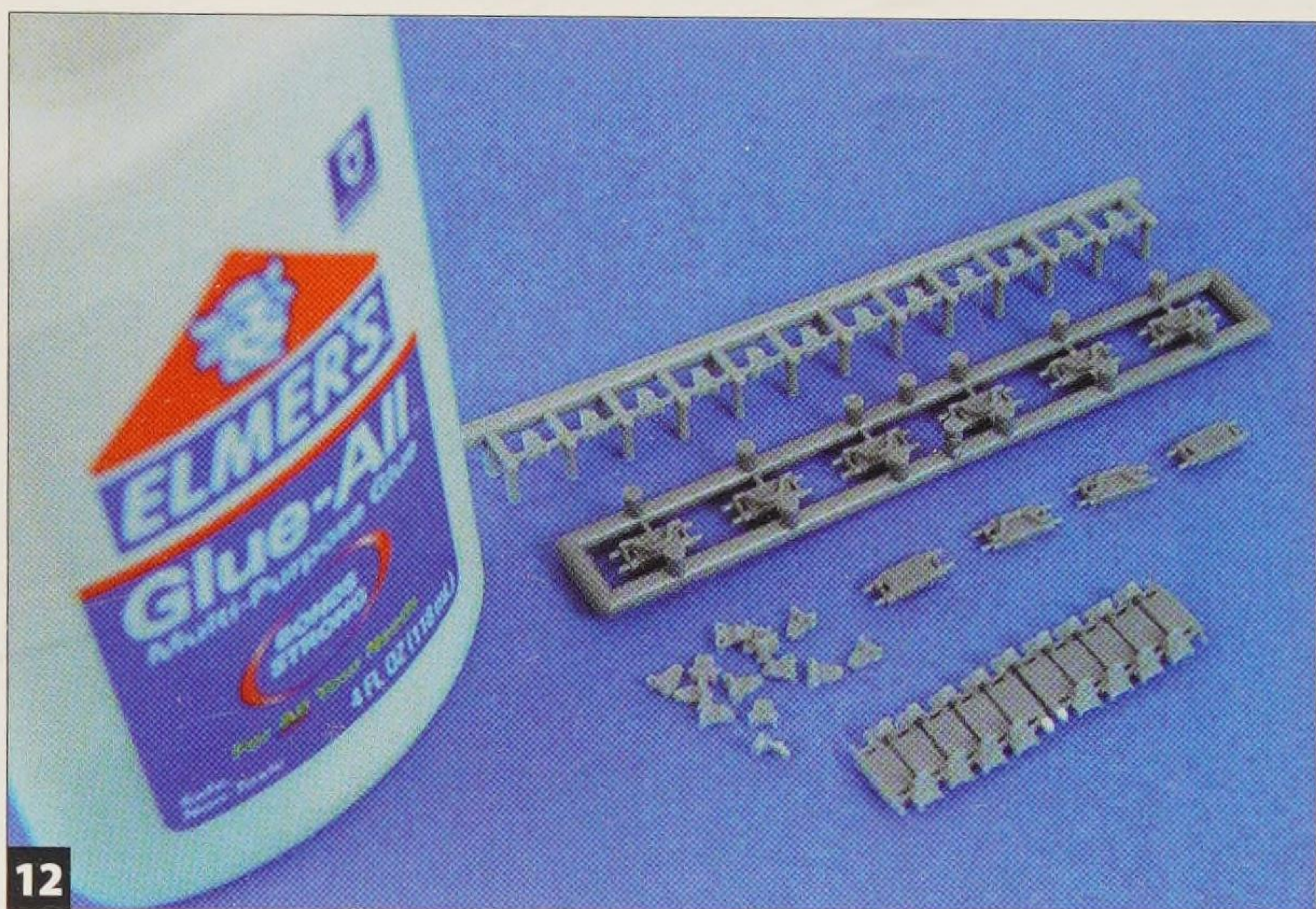
9 The gun barrel and other remaining details can be added to the turret. The brush guards are from a Dragon kit.



10 Add the .50-caliber (left) and .30-caliber (right) machine gun kits. Both are made by Verlinden.



11 Several small crates and packs (from multiple sources) are glued in place on the rear of the tank.



12 The tracks are from Panda Plastics. A drop of white glue on the end connectors holds them while still leaving them workable.

extra machine gun mount in front of the commander's cupola.

Many photos show Shermans with a .30-caliber machine gun mounted in this location so that it can be fired without completely leaving the turret, **10**. The machine gun is a nice set from Verlinden as is the .50-caliber version. Both are sold in sets of four in the company's Super Value line. The details are crisp, so they look great after painting and dry-brushing.

Stowage. I'm planning on having two infantry riding on the back of the tank, so the amount of stowage isn't that great, **11**. Plus, with all the sandbags, this model doesn't really need much stowage visually. So I found some small packs and crates to place on the rear rack and against the sandbags, which should be just enough.

Tracks. As much as I love the simplicity of the single length tracks in the

previous chapters, for a top-of-the-line model, there's nothing that beats the look of link-to-link tracks. Fortunately, a company called Panda Plastics makes a well-detailed but still easy-to-assemble set of workable link-to-link tracks, **12**. Panda offers most of the versions used on the Sherman and even provides the add-on duckbills. Assembly is easy since it just takes a link and two press-fit end connectors on the pins on the link.

Sometimes the end connectors fit a little loose and want to fall off. I've found that by placing a small drop of white glue on the track link pins before pressing the end connector in place, they will stay put. And the tracks are still workable, so you can paint them separately.

Also, I usually make a series of runs of about five links at a time, and after all those dry, I attach them together to make the full 79-link (plus or minus) tracks for each side.

Figures. The tank crew is mostly Verlinden figure parts, **13**. Verlinden sells a big set of the figure parts under its Super Value line, and these are great if you like to make figures in different poses. So I trimmed and adjusted a little to come up with these guys. The driver is an old Tamiya plastic bust with a resin head.

The infantry riding on the back are also from a Verlinden set with one man's arm repositioned just for variety. The key to the tank riders, especially the guy with his leg sticking out, is to make sure that they both sit firmly on the hull, **14**. A little shaving on their bottoms was required.

I painted the figures based on reference material, but the colors on the Verlinden box are pretty accurate. At this point the assembly is complete, **15, 16**.

Painting. For the most part, I followed the same process that I used on the M4A1 in the first build-up so I won't repeat all of



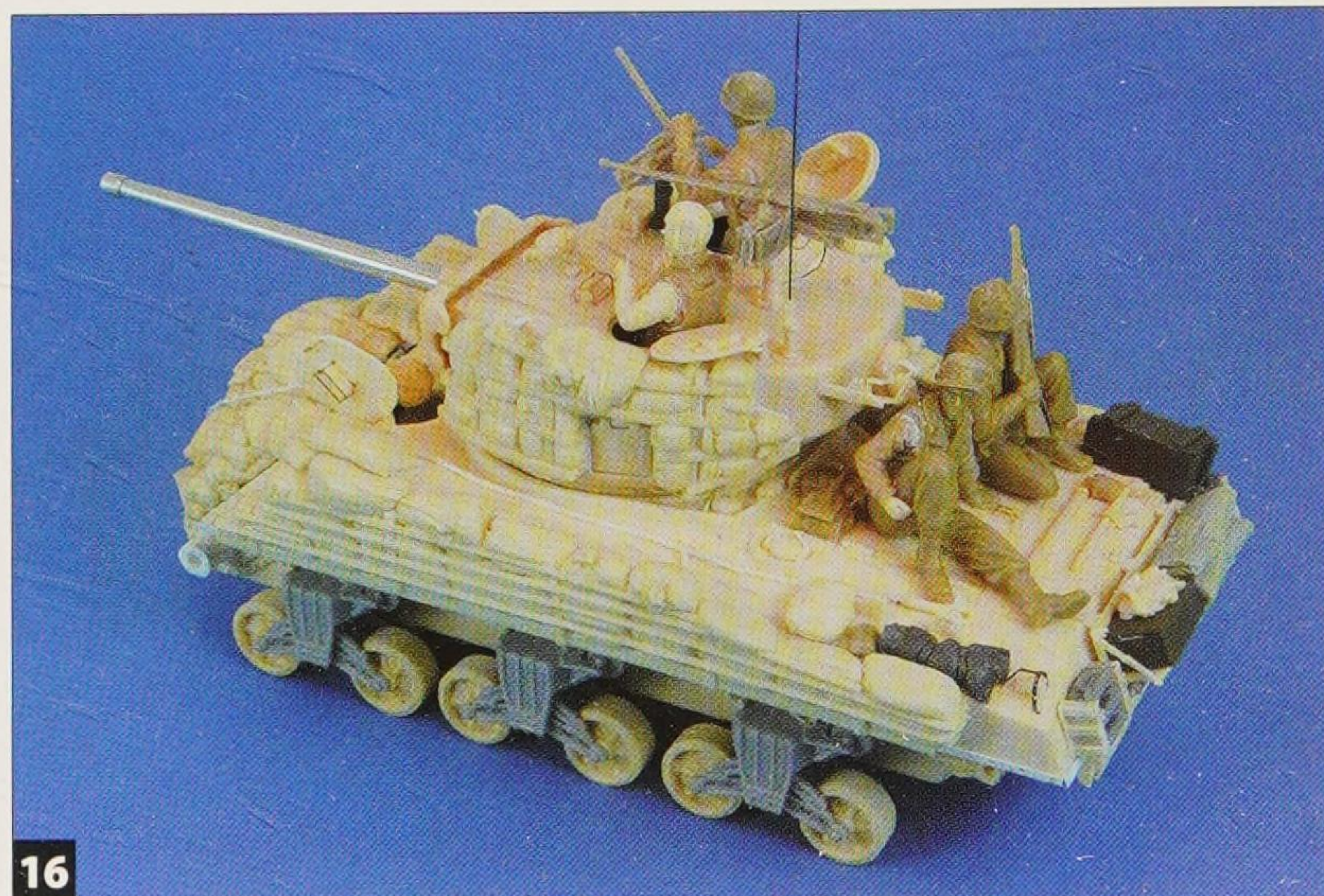
13 The crew figures on the left are from Verlinden; the driver (right) is a Tamiya plastic bust with a resin head. Poses can be altered.



14 Make sure that figures riding on the tank are sitting firmly on the hull. Some shaving on the legs and rears is usually needed.



15 The basic assembly is now complete. This view of the right side and front shows the location of the sandbags and other details.



16 Here's a view of the completed rear and left side of the Sherman. The tracks will be added after painting.

the methods here, **17**. But one change was that after I had panel faded the first Olive Drab, I then painted the sandbags using first Model Master Afrika Khakibraun and then a panel fade with a lightened version of Model Master U.S. Army/Marines Sand, **18**. I finished up the sandbags with a dry-brushing of Model Master Sand.

Then I touched up the overspray on the Olive Drab with a brush and also painted the support brackets for the sandbags. This is a slow and time-consuming job but there is really no other way. Finally, I panel faded with Faded Olive Drab. Doing this allowed me to blend out the brushed touch-ups to the Olive Drab. By painting this way, I could avoid the time-consuming job of masking and still have the panel-faded and blended look.

As with the M4A1 build, I hand-painted the tools, stowage, and machine guns. My goal was again to provide as much color variety as I could realistically justify. Thank-

fully, this model, due to the sandbags, is quite colorful already so with a bit of extra color, it really jumps out.

The sandbagged Shermans didn't seem to carry much in the way of markings, but I did note that many had unit markings on the barrel. So I found some appropriate markings in my spares bin and added them.

Weathering. Like the paint work, the weathering followed the same process as the M4A1 build with the first step being a wash using thinned Raw Umber oil paint. I didn't add many streaks since most of the vertical surfaces are covered in sandbags. As with the M4A1 build, I then added some dusting of thinned Tamiya Buff. I wrapped up the weathering with pigments and a little "reverse dry-brushing" using flat black.

The tracks were also painted like the M4A1 build. These tracks are all metal and having seen a real Sherman that had just

driven over some concrete, I can tell you that the "chevrons" are quickly worn to shiny bare metal. So after applying the pigments, I dry-brushed them with Model Master Metalizer Aluminum, **19**.

With that done, I attached the tracks, adjusted the tension using the adjustable idlers, glued on the painted figures, **20**, and the model was complete, **21**.

Making a scene. Since I went all out on the Sherman, it seemed only appropriate to go all out on the base too. For a long time I've wanted to use Verlinden's pontoon bridge, and this Sherman seemed perfect. Most of the dioramas I've seen with the pontoon bridge have the tank driving off the bridge and on to the embankment. But for me, the problem with this arrangement is that the tank and the bridge end up in the background. I really want them in front, so I'm going to reverse the entire layout.



Painting starts with panel fading. The tools, stowage, and machine guns are all hand-painted with various colors.

My plan was to have the Sherman driving onto the pontoon bridge from the embankment. So the Sherman on the pontoon bridge would be right up front. Of course, my original idea was to accomplish this with a nondescript embankment in the background. Then I started thinking that it would look even more dramatic if I had the Sherman on the bridge and another on the embankment waiting to get on the bridge. Many photos show a whole line of tanks and vehicles lined up to cross the pontoon bridges, and that was the idea I wanted to capture in this scene.

To be perfectly honest, part of this approach came about because I accidentally broke the groundwork on the M4A3(76) shown in the gallery. So I could either spend my time repairing the groundwork or use it in this diorama. After messing around with the layout, I only needed to add about 6" to the depth of the base to place the second Sherman.

But now the base was getting more depth than length, and I thought that would look a little out of balance. Just widening the base would leave a lot of open river in the front and that might be a bit boring. Then it hit me that I could put a partially submerged Sherman in the river! Hey, this is a book about Shermans right? So now I had an excuse to make another Sherman, or at least part of it. But why would it be in the river? After looking through the Verlinden catalogue I saw that they make a product called Blown Bridge Head, which is just that, a very short piece of a bridge and an embankment wall that it is attached to. So my

thought is that the Sherman attempted to cross the bridge, which gave way, forcing the engineers to build a pontoon bridge next to it. Seems plausible, right? With that, I had a plan.

Submerged Sherman. It's funny how sometimes a simple idea can get out of control. When I planned to make a submerged Sherman, I thought I'd just use the Submerged Sherman from Verlinden. It's perfect except for one crucial detail. It is an M4A2 with welded driver's hoods, and this variant wasn't used by the U.S. Army. Grrrr.

Thankfully, I had a plan B. In my stash of Sherman stuff, I had Formations Late High Bustle 75mm Turret and a whole lot of leftover detail parts for an M4A3 upper hull. So I contacted the folks at Formations, who were nice enough to provide me with another M4A3 upper hull (same as the one I used on the sandbagged Sherman). All I had to do was cut it down a bit to simulate it being partially submerged, **22**. After studying the photos of the Verlinden Submerged Sherman, I marked a pattern on the hull and got out my motor tool with the high-speed cutting wheel. It only took five minutes to cut off the bottom part of the hull.

Use protective eyewear and a breathing mask when cutting plastic with a motor tool!

I decided to model the Sherman with its hatches closed, **23**, and all of the loose gear like stowage, the .50-caliber MG, and the pioneer tools removed.



Sandbags are panel-faded Afrika Khakibraun. Weathering includes a Raw Umber oil wash and a dusting of Tamiya Buff.

This gave me an opportunity to use some leftover Eduard photoetched metal parts for the pioneer tool brackets. I also found some leftover photoetched periscope guards and a light guard. Then I grabbed some Dragon parts left over from the M51 kit for the vent cover and the headlight, **24**.

All said and done, it took only one day to make the entire model and have it ready for painting. I painted it in the same manner as the M4A1 in the first build-up, **25**, and the decals are leftovers from an old Tamiya Sherman I built years ago, **26**. Good thing I saved all of these things!

As with the M4A1, I dry-brushed with Afrika Dunkelgrau and then added some light streaking to the turret. I didn't add streaking to the hull since I assumed much of it would be washed away in the river. Using the same logic, I did not add any "dusting" or pigments. But I did apply a little reverse dry-brushing with flat black to simulate paint scraping.

Making the base. Wow, the pontoon bridge is really big. Each pontoon is almost 11" long! So I used a piece of poster board to play around with where I wanted all of the large parts and settled on an overall size of 18" x 18". Fortunately, I have a friend who didn't mind cutting me a piece of scrap plastic to that size. Alternatively, Plastruct and others sell large sheets of styrene, which you can cut and glue together.

I adjusted the length of the blown bridge head to allow the pontoon bridge to end up in the right position. Since the bridge head is made from plaster, it is easy



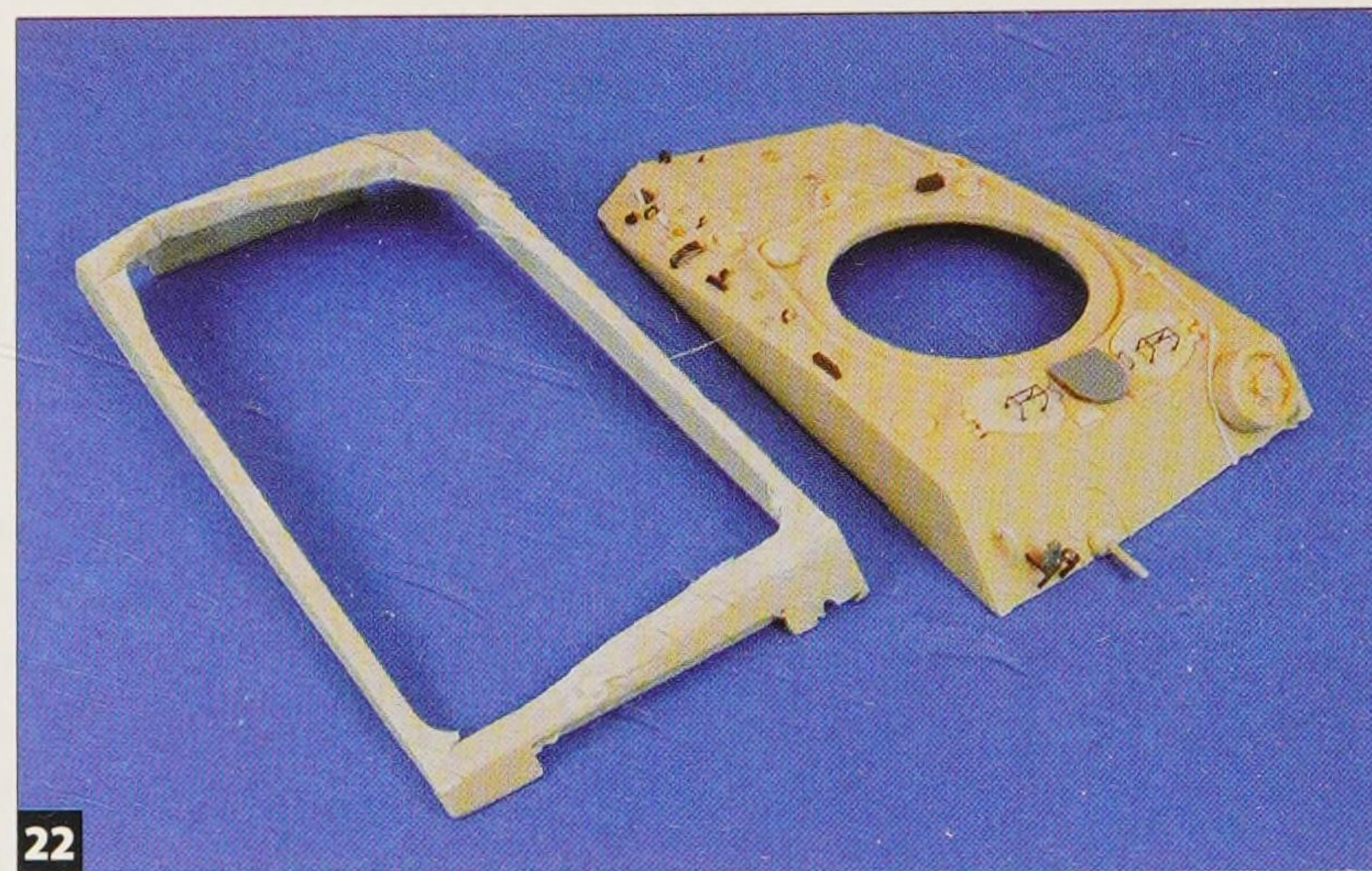
19 Paint the tracks and then dry-brush them with Model Master Metalizer Aluminum. Install the tracks and adjust the tension.



20 Paint and weather the crew figures as described in Chapter 1 and glue them in place on the tank.



21 The detailed castings, additional parts, and painting and weathering give the completed M4A3 a realistic appearance.



22 To capture the look of a tank submerged in water, I cut the lower hull to a shallow profile with a motor tool and cutting wheel.

to cut off a little bit with a saw. Then I used Verlinden's Embankment Walls for the rest of the river embankment. Again, I had little trouble cutting the plaster parts to the right length. I also had to cut out a section that the engineers would have broken down to allow the pontoon bridge to be deployed.

Behind the wall, I needed to build a raised platform of 2". Fortunately you can buy a nice piece of 2"-thick foam in the floral section of most art supply stores. This foam is pretty strong and yet can be cut to size using a big kitchen knife.

I carved the ramp channel using an electric knife, **27**. It only took me about 30 minutes to cut the foam to shape and make the channel, so it's a simple and quick project. I glued it and the embankment pieces in place with five-minute epoxy.

Next, I turned to the roads and sidewalks, **28**. I made these out of 1/8"-thick styrene sheets just as I had made the bases in the previous builds. I carved a

simple sidewalk pattern by scoring with a knife, and then I added surface texture using the same Tenax-and-stiff-brush method that I used for applying casting texture in the M4A1 and M51 builds. For this application, I went a little heavier on the Tenax, so the result was a bit rougher finish. The truth is that it doesn't matter that much since a lot of the sidewalk and roads will be covered in rubble and debris.

I glued the sidewalks to the roads using liquid glue and then I glued the roads to the foam and embankment using epoxy. Once it was dry, I built up sidewalls of .030" sheet plastic around the base.

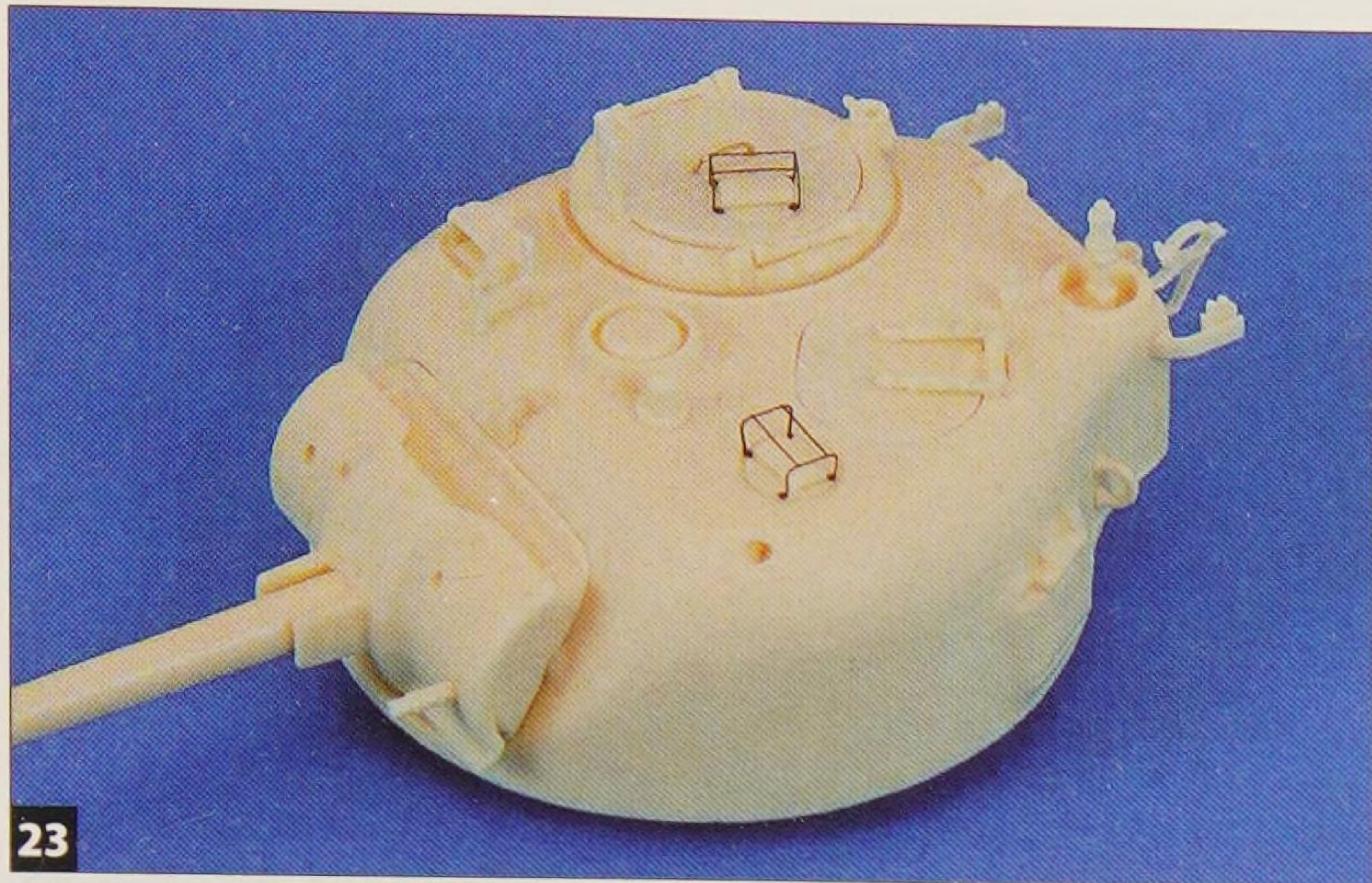
Since the base, the roads, and the sidewalls are all plastic, I was able to use liquid glue to attach them quite firmly. I did use a little super glue where the side walls attached to the plaster embankment parts, but the result is a strong base. Better yet, I was able to use regular putty and sanding methods to smooth out the joints and get a nice clean finish.

Buildings. In order to give the diorama some focus, I decided to add two partially destroyed buildings in the background. My idea was to frame the scene and make it clear which way is the front.

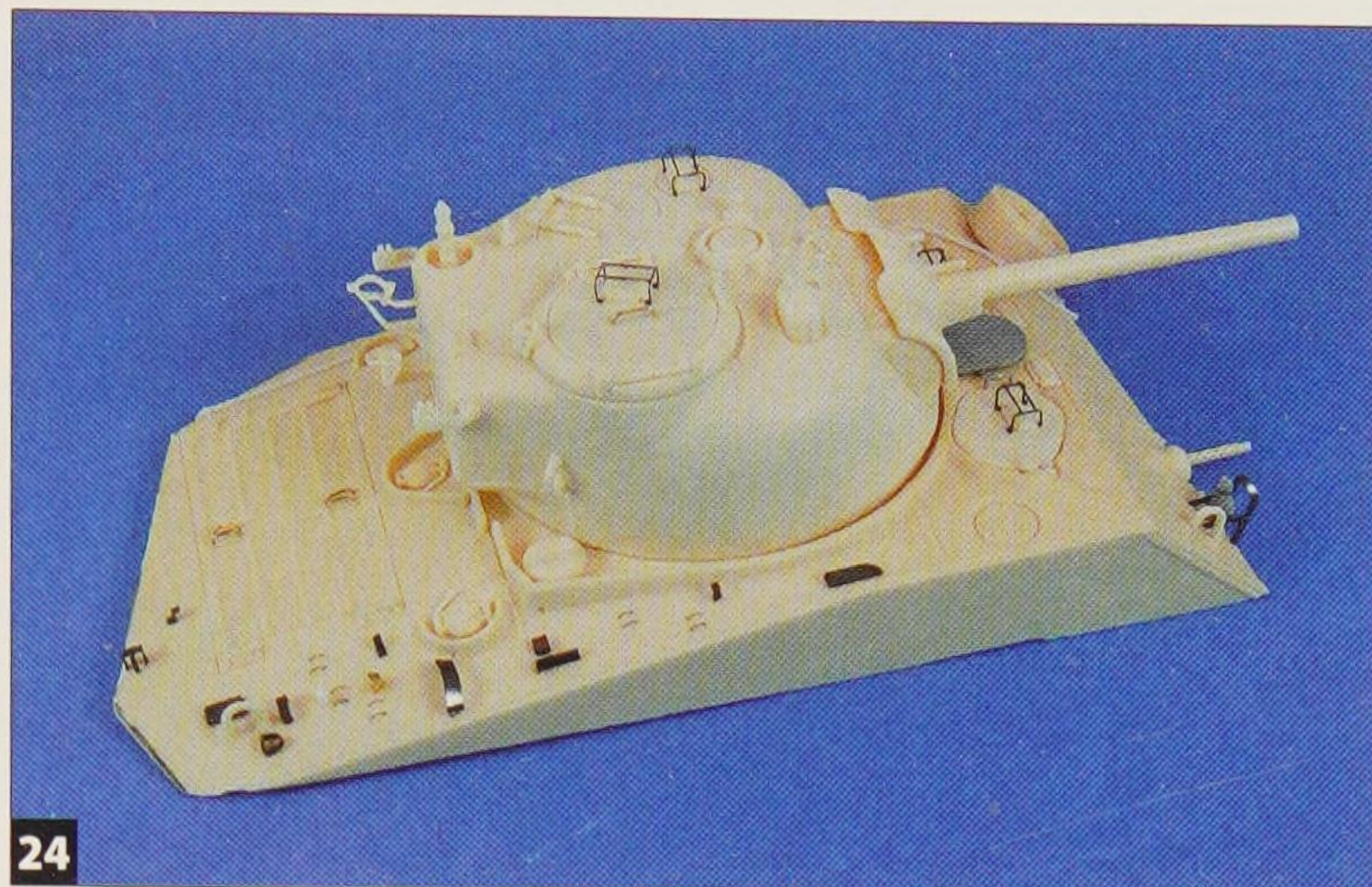
The large building on the right side is a Verlinden plaster building called City House Front. I chose this because it is in plaster and thus pretty easy to cut up so it just fits in the space. The other building is a small piece of a Verlinden resin set called Bombed Out Street. I chose resin since it's just a small piece, and plaster would be very susceptible to breaking. The resin required trimming with a motor tool and a cutting wheel to get the parts I needed, but the result is just what I was looking to achieve.

Since the buildings aren't the main focus of the diorama, it's not important that they be overly large or detailed. Their purpose is to give a visual sense of the scene taking place amongst the ruins of a bombed-out city.

I used another Verlinden product called Floor Section for Ruins to add the



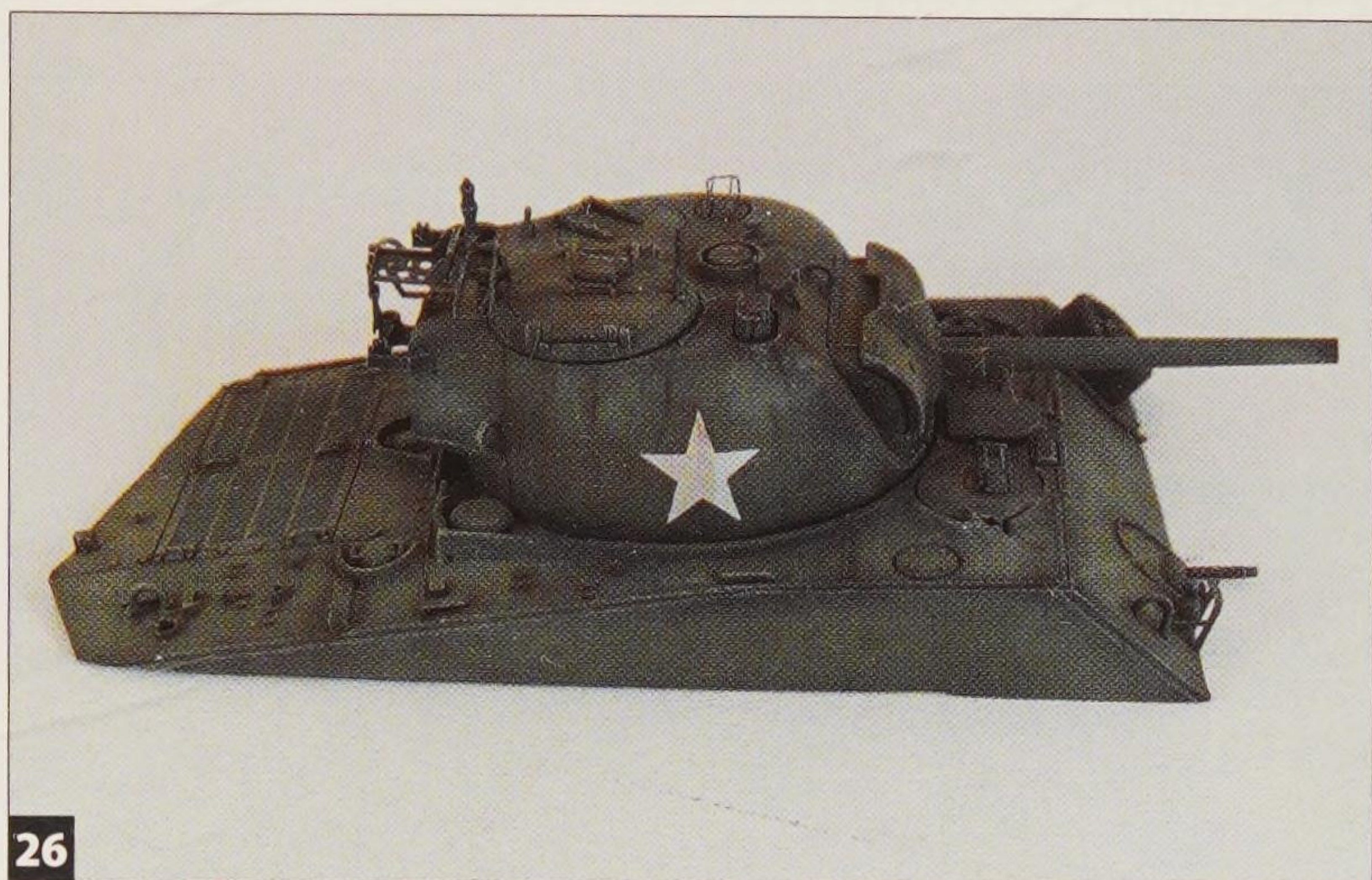
The hatches on the submerged Sherman are modeled in the closed position, with machine guns and loose gear removed.



Detail the hull using Eduard photoetch items for the pioneer tool brackets as well as other assorted parts.



I painted the submerged model in the same manner as the Sherman in Chapter 1.



Decals are from an old Tamiya kit. I added some light streaking to the turret, but no dusting or streaking on the hull.

partially destroyed floors for each building. I had to cut the resin pieces to the correct size but once in place, they add presence to the appearance that these were once large, multi-story buildings.

Finally, I carved some foam into wedge-like shapes where there will be a lot of rubble. I like to do this to save on the amount of actual rubble I needed to make, so it's just a simple cheat to make the construction to go faster.

Before adding the rubble, I pulled out of my spares bin some left over Verlinden furniture, which I added to the large building. I thought it would be an interesting little addition, and since I had the items, why not use them?

Rubble. Well you can't have a wrecked city without rubble, right? Making rubble can be hard and time consuming, so I've developed a few tricks that make it easy, quick, and even fun.

To start with, I mixed up some dirt groundwork just as I did on the M4A1

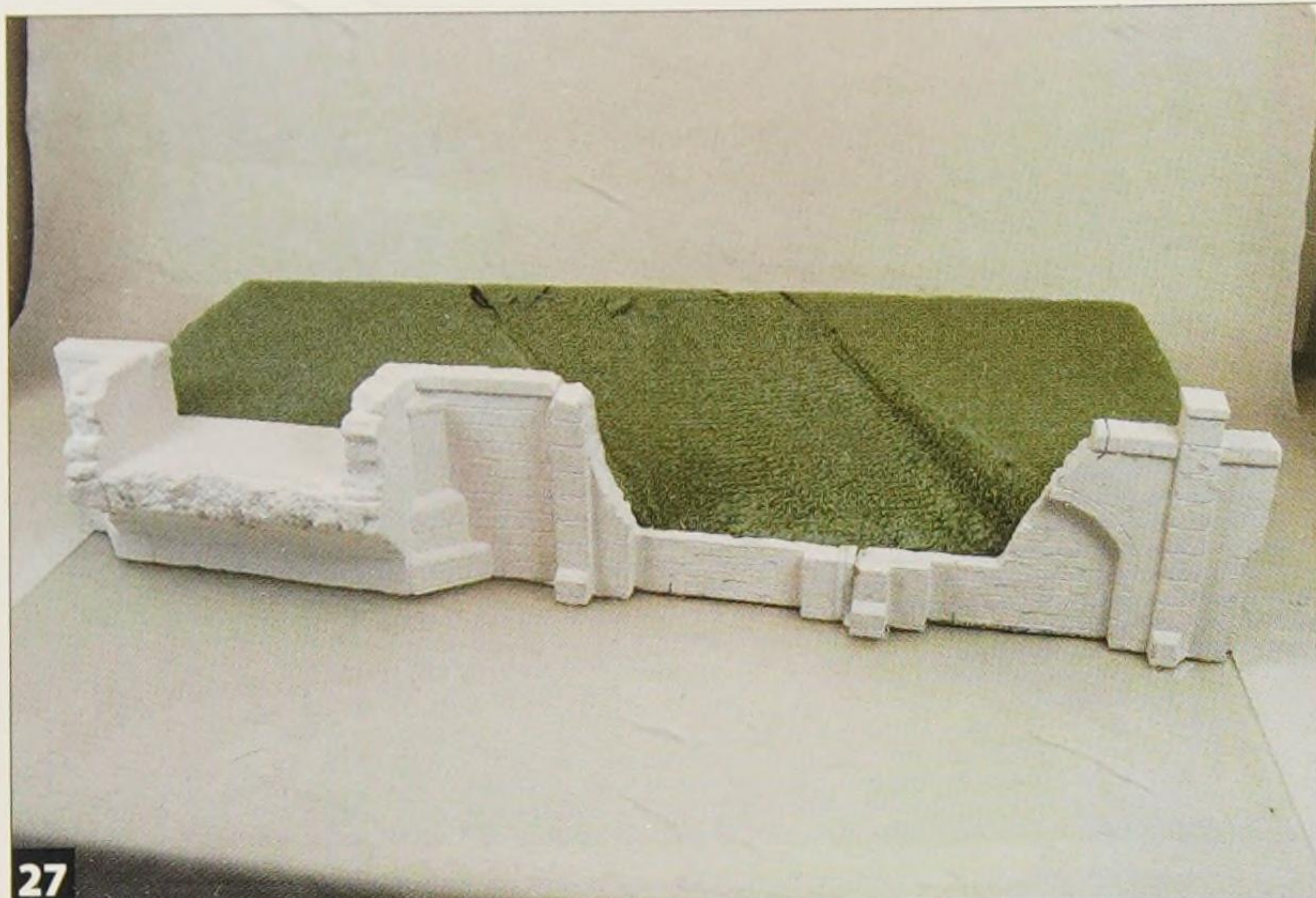
build-up in the first chapter. I made it a little thinner so it would spread over the uneven surfaces a little better but basically it's the same stuff. I spread this over the areas where I wanted to show heavy rubble. In this case, it's the foam wedges in front of the buildings and in the river where the embankment is knocked down plus the groundwork inside the buildings. I did my best to make sure the furniture remained pretty exposed.

Then I used a Hudson and Allen product called Rubble, **29**. It's a great mixture of dirt, loose bricks, gravel, some small pieces of wood and a little thin speaker wire. Basically, all of the ingredients of rubble. This product is sometimes hard to find, and in the past I've just made my own. Several companies sell loose bricks, and you can buy scale gravel from most hobby supply companies that make model railroading products.

While the dirt groundwork was still wet, I simply dropped large amounts on top and pressed it into the ground. For the

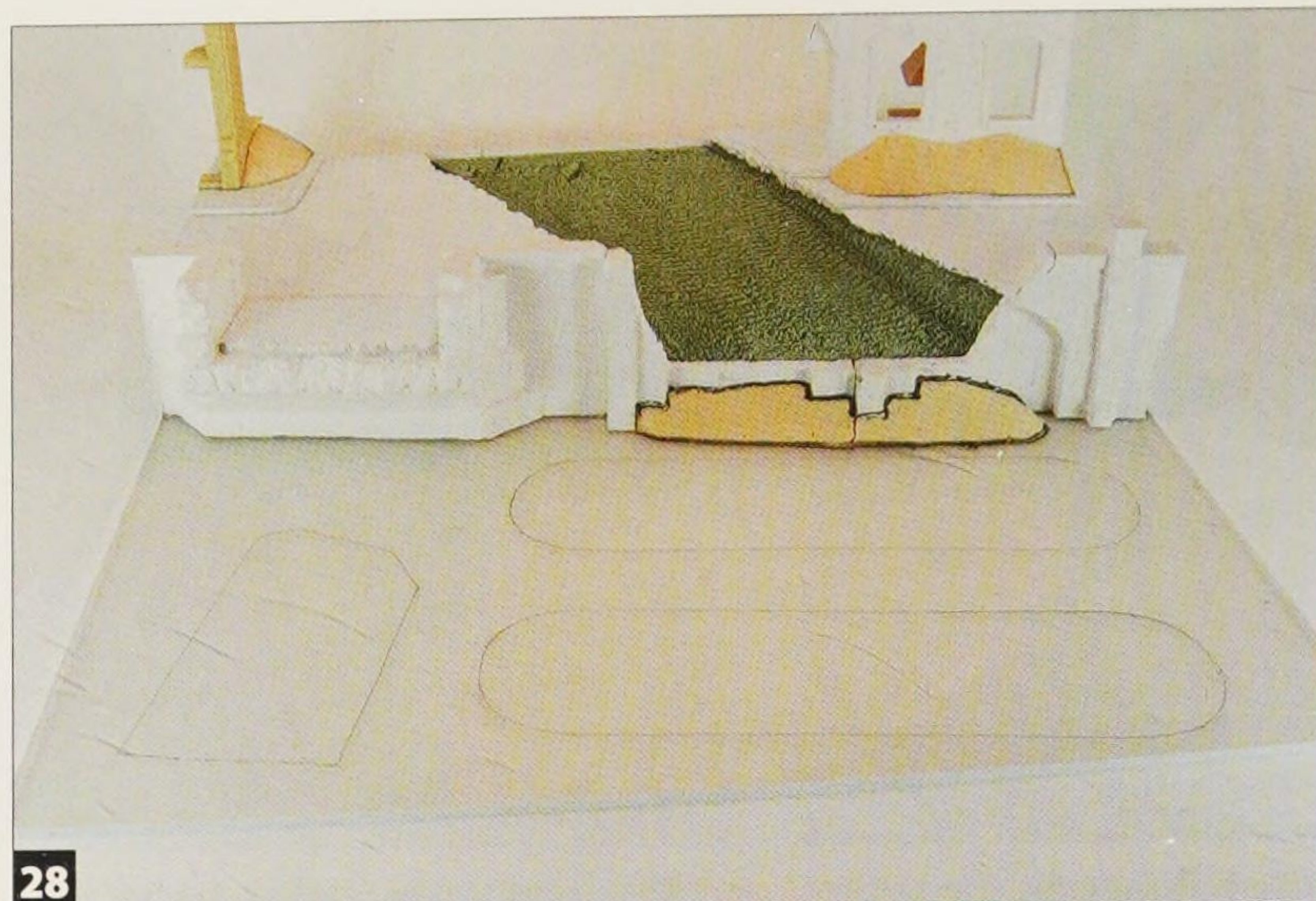
most part, I let it fall randomly but I did position the wood pieces. I also spread some rubble over the furniture and on the upper floors and top surfaces of both buildings. Finally, I spread some rubble into the corners of the street and embankment and a little on the streets.

At this point, most of the rubble is loose, so the last step is to secure it to the base. For this I use a product called Scenic Cement from Woodland Scenics. It's a strong but very thin white glue. In fact, it is thin enough to put into a squeeze-trigger spray bottle, which is the key to securing the rubble. I use the Woodland Scenics bottle but I think you can also use an old sprayer from a household cleaning product. Apply it heavy, really heavy. I made sure everywhere that has rubble got coated. The cement dries flat, and with no sheen, you don't have to worry about buildup. Most likely it will leak down the sides of the base so have a paper towel ready to wipe it up. Then let it dry. This base took several days to get nice and dry,



27

An electric kitchen knife worked well for carving the ramp in the 2"-thick foam base behind the wall.



28

Make the roads and sidewalks from 1/8"-thick sheet styrene. To give the surface texture, brush on Tenax and stipple it with a brush.



29

Rubble, a product from Hudson and Allen, lives up to its name. Bond it with Woodland Scenics Scenic Cement.



30

Paint the diorama base, starting with flat black and applying progressively lighter colors.

but once it did, the rubble was in place and I could now start painting.

Painting the base. Painting the base is a big job. But a few tricks make it go quicker. The first is simply to have a game plan. I try to visualize the order of the painting and then actually put down each color in that order. For the most part, I try to paint from dark to light. If possible, I try to paint similar colors—shades of gray for example—one after another so I can avoid cleaning the airbrush each time.

The second tip is to remember that you can do a lot of the painting by brush later so no sense in killing yourself with the airbrush when a few minutes with the brush will do it. For example, loose red bricks are better done with a brush.

The third tip is to remember that this is a destroyed city. Unlike an undamaged or even a moderately damaged set of buildings and roads, destroyed things tend to

have a great uniformity of colors so it's not necessary, or even desirable, to carefully mask areas. For example, the window frames on the building are not masked and thus they don't appear as crisp. But this is good for a wrecked building where the dust, dirt, and rubble are all over.

The main point is that wreckage is actually easier and quicker to paint in many ways than a nice, undamaged section of a city or street scene.

So I started with flat black, **30**, because I wanted to paint the base's sides and then mask them before I painted the rest of the base. But I also used the flat black as the base coat for the buildings and roads so that I could start panel fading right away.

I progressed through lighter and lighter grays until I had a variety of grays on the base. As with the black, I would use a darker gray to set up the panel fading for the next lighter gray. By doing this, I was able to minimize the amount of colors I

needed and also avoid cleaning the airbrush too much.

Once I'd done this with the grays, I did the same with the brown colors for the dirt access ramp.

My second-to-last color was the green for the river and the last color was Model Master Raw Sienna for the rubble. I extended the Raw Sienna into the streets since the rubble and dust would spread out. Thus I achieved an integrated look.

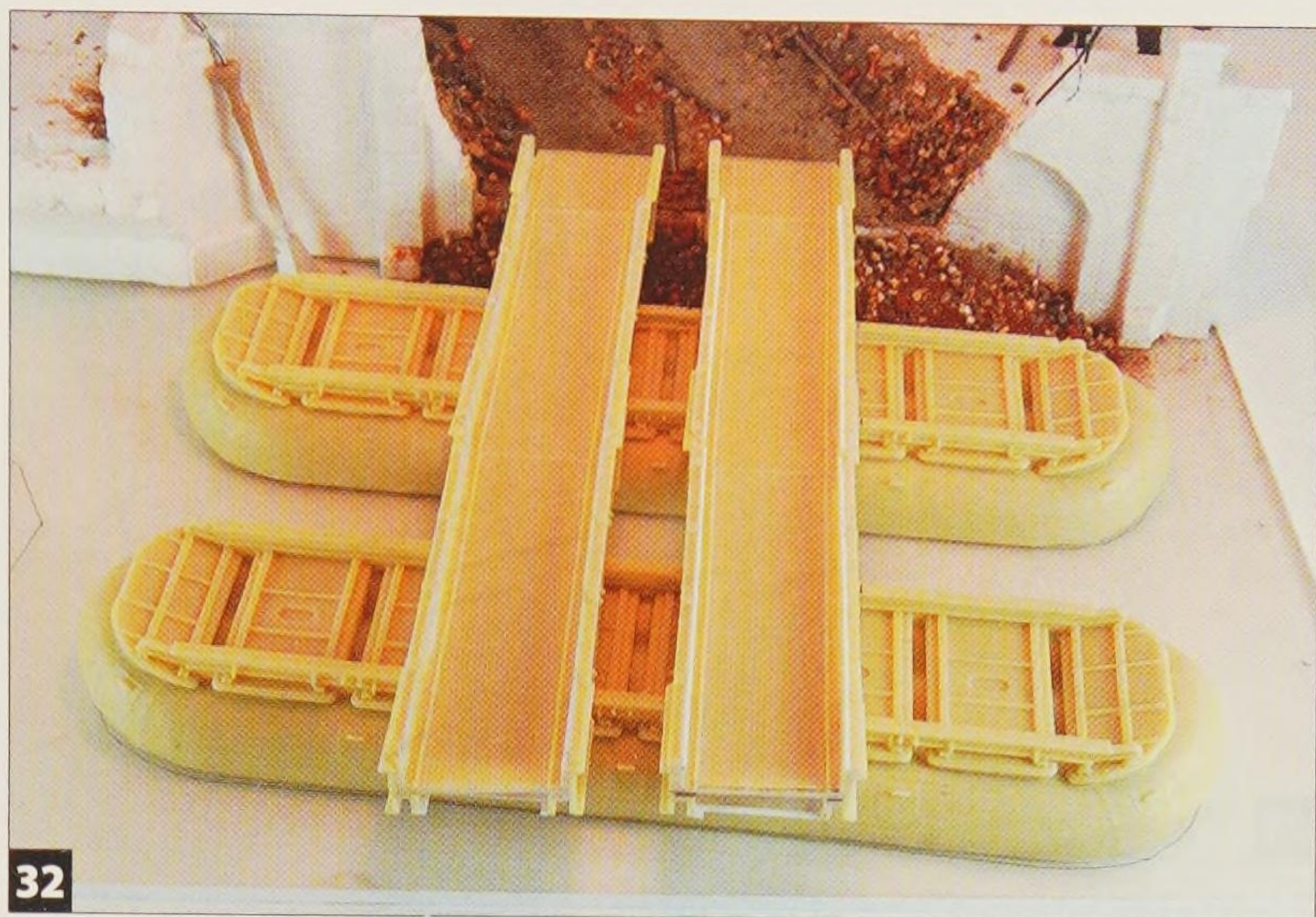
I then did a little brush-painting of some key details. Mostly this was the Model Master British Crimson Red on the loose bricks and the Dark Tan on the wood parts. I wanted these to be distinct so the base would have some variety in color. Otherwise it would look too bland.

Then I turned to dry-brushing. I used a medium gray for the rubble areas since I wanted them to look like they have a lot of stone in them. For the dirt areas, I used Afrika Dunkelgrau to convey more of the



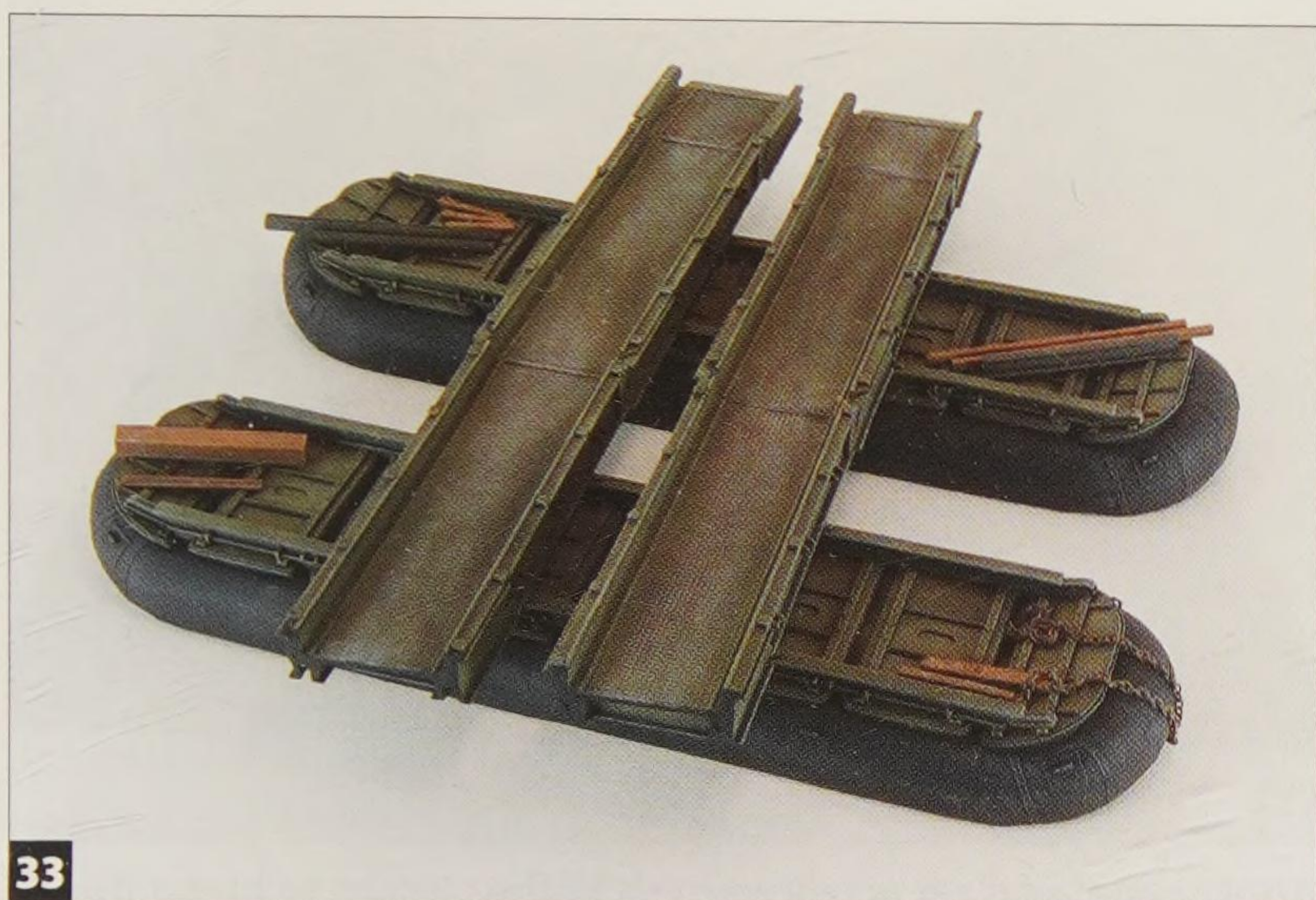
31

Once the base is painted, give the entire base (except for the river) a wash of Raw Umber oil paint.



32

Verlinden makes a resin kit for a pontoon bridge. The ends are cut off to match the edge of the diorama base.



33

Paint the bridge in the same manner as the tanks. Add metallic streaks to the surfaces where the tank tracks would be crossing.



34

Glue the pontoons and submerged tank in place in preparation for adding water.

natural dirt look. It's a notable distinction that your eye can pick up.

Then I added a few oil drums, wood boxes, and water and oil cans. This is a simple way to fill space and add a few more items that provide different colors.

Finally, once everything was good and dry, I gave the entire base, less the river, a wash in thinned Raw Umber oil paint, **31**, just as I had used on the tanks. This step ties all the parts of the base together and accents the details on the parts.

The pontoon bridge. The pontoon bridge is a Verlinden item, **32**. It is easy to use since the pontoons are single large castings and the Treadway Bridges spans are also just a couple of large spans plus some side brackets and end ramps. But one challenge for this scene was to get the ends of the roadway to match the angle of the base so it would appear that there is more of the bridge to the front of the

scene. To do this, I set up the bridge on the base and then marked on the roadway sections where the edge of the base was located. Then I used a motor tool to cut off the ends to the bridge spans.

But this left me with another problem. The real bridge is made from girders and cross spans. But the Verlinden parts are cast solid to make them easy to use. Normally, if you are using the entire span with ramps on each end, this is not an issue since you can't see much under them anyway. But in this case, I needed to do something because I had two solid ends staring straight ahead at the front of the diorama.

No way was I going to rebuild the entire section to be that accurate. Not only would that have been a huge project, but most of it would have been barely visible. In the end, I decided that what I really wanted was to make a modification that would not attract a person's eye since the main aspect of the diorama is elsewhere.

I simply ground out a little bit of the underside of the bridge spans to make a rectangular pocket. Then I cleaned it up and added some strip plastic to give the impression of I-beams. So now it looks like the two side girders and a cross brace. It's not accurate, but it was pretty quick and looks a lot better than a large chunk of resin.

Painting the bridge is really the same as painting an Olive Drab tank, so I used the same methods and colors as earlier in this chapter, **33**. I did add a lot of metalizing to the areas of the bridge where the tanks' tracks would be since a heavy tank with metal tracks driving over a metal bridge would pretty quickly wear off the paint. I used Model Master Metalizer Dark Anodonic Gray followed by Aluminum for these areas.

Additional details and preparing to make water. With all of the components completed, it was time to prepare the



35

Enviro-Tex Lite is a two-part clear resin that works well for water. Make sure you have a leak-proof dam around the water area.



36

I apply clear water-soluble sealant atop the Enviro-Tex to make waves and ripples. Apply it with your fingers and a toothpick.



37

The clear sealant can make small ripples or large waves. Use multiple coats for tall waves or other extreme effects.



38

Apply a coat of clear acrylic varnish to the surface to blend the resin and sealant together.

base for the water. The first step is to glue the pontoons and the submerged Sherman in place, **34**. I didn't attach the bridge spans so I could access the water areas more easily. I also glued the figures in place at this time. The three guys standing on the road are a Verlinden set called General Patton & Staff. However, I didn't want to model Patton himself, so I shaved off a star on his helmet. I painted these figures to match the box photo, which looks correct according to my reference books.

The figure standing on the submerged Sherman is from a Verlinden set called Loading Up. After I make the water, I'm going to add Verlinden's Small Row Boat loaded with packs and pioneer tools from the Sherman.

The idea is that this soldier has been sent to the Sherman to recover what he can. He is lowering the tank's M2 Heavy Machine Gun into the row boat. I had to modify the pose to get him to be holding the gun.

A key point is that the M2 machine gun weighs more than 80 pounds, so I wanted the pose to show him struggling to wrestle it into the boat. The gun itself is a Tasca .50-caliber MG, which is the only one I know of that doesn't have the gun's cradle molded to the gun.

With all of the parts in place, I built a dam so I could pour in the resin water. I bought some strips of plastic .030" thick, 1" wide and 24" long from Plastruct. On the inside I placed a strip of 1/2" double-sided tape. Oddly, the sticky part of the tape acts as a perfect barrier for the resin water. It keeps the resin from adhering to the dam walls so you can remove the dam parts after the resin has dried. Strange, but a huge help in making water.

The most important thing to keep in mind when putting up the dam is that it cannot leak! Trust me, speaking from personal experience, if the resin leaks out, it will make a mess like no other, and not just on the base but on your workbench,

the floor, and anything else that it comes in contact with.

To prevent that, I triple taped the outside edges of the dam walls using clear gift wrap tape and then masking tape.

Making water. For the water, I use a product called Enviro-Tex Lite, which can be purchased at most art supply stores and also online, **35**. It's a two-part resin that is very easy to use since it takes at least 12 hours to fully dry. Best of all, you can tint it using acrylic paint. So I just mix it up in a plastic mixing cup with a popsicle stick per the instructions in the box. I've found that you can pour it to a depth of about 1/4" without it getting too hot.

One cool tip is that you can get out the air bubbles by breathing on it. It seems that the carbon dioxide in your breath reacts with the air bubbles and causes them to pop. So after pouring it in place and waiting about a minute, breathe gently on the surface and watch the bubbles

just go away. I've found that it's a good idea to repeat this a number of times over the first 30 minutes. After that, you'll want to check on the water to make sure no late air bubbles show up. Those can be popped with a pin, and the resin will still flow enough to fill them in for about the first four hours, so it's a pretty forgiving process.

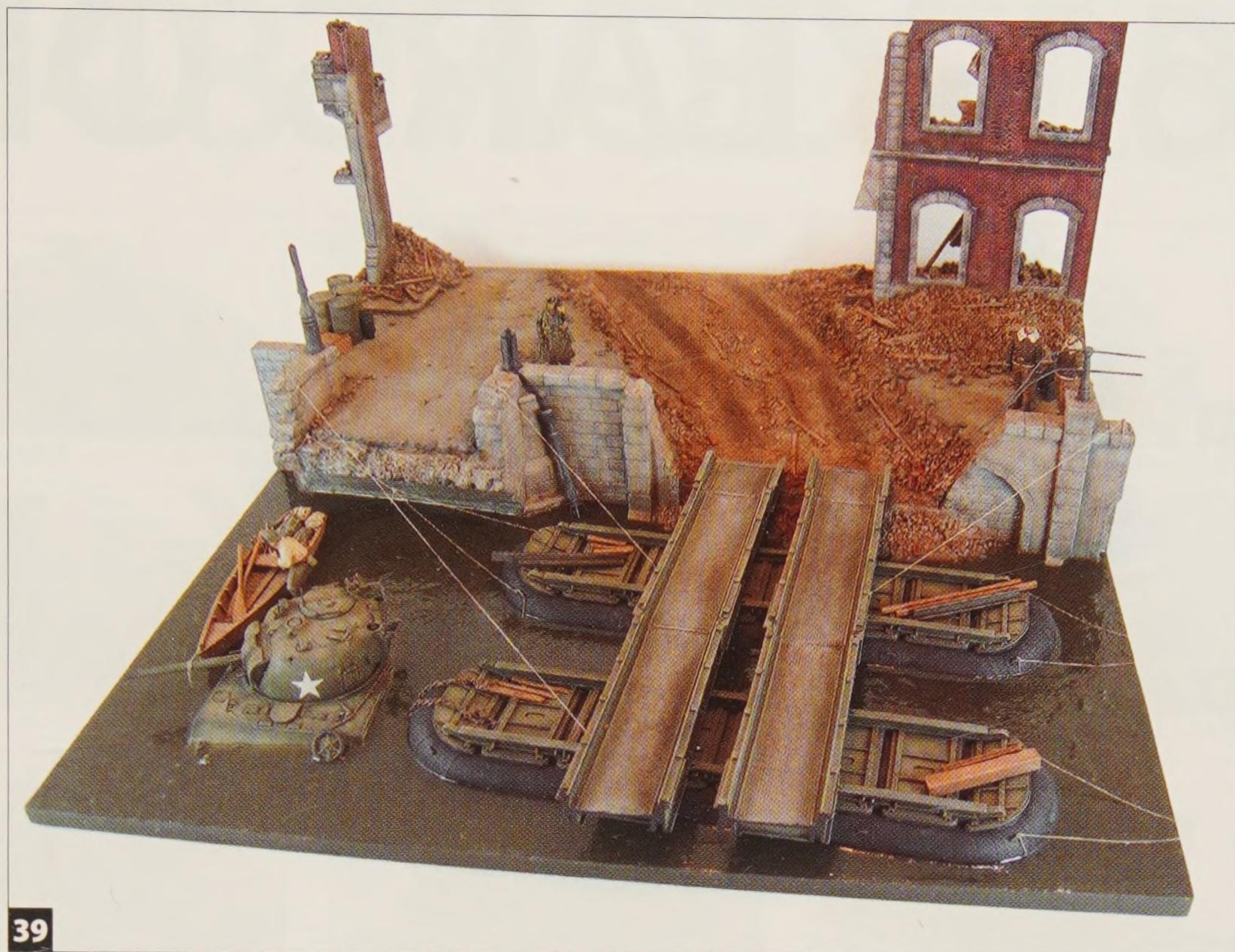
I ended up tinting the water quite a bit because I wanted to make sure that you can't see the edges of the submerged Sherman. The point is that the tank should appear to be protruding from the water, and if you can see the hull's edges, then it'll look like the lower part of the tank isn't there at all, which is wrong. I ended up making two pours of the resin about 24 hours apart to a depth of about 1/2" to accomplish this.

After letting the water dry for two days, I pulled off the dam walls. I had a few minor capillary leaks but nothing too serious. The resin dries rock hard, and you can sand and cut it like resin aftermarket parts. I used some paint thinner to get the sticky residue from the tape off the edges of the resin. One problem that almost always occurs is that the resin creeps up the dam walls leaving a bit of a curved lip around the edges. I use a hobby knife to shave this off. Since I will be applying a surface texture later, there is no need to be exact; the only goal is to get it nearly level.

Finally, I airbrushed the edges of the water with the same paint I used to tint the water. Normally, I don't make the edges of water to be see-through. I think it would look awkward because you can't see through the rest of the base.

Water surface texture. I always add some type of surface texture to the water. Resin is too smooth for even the calmest water. I think I've tried nearly every type of product for making surface texture, and in the end, the best is the clear silicone sealant that you can buy at a hardware store, **36**. This is the stuff that is used in showers and around sinks and is cheap. Be sure to buy the water soluble type.

I spread it on with my fingers and a toothpick for the tight areas. Because it's water soluble, you can dip your fingers in water and then thin it a little while it's on the base. For calm river water, I just tap my fingers on the silicone to get some ran-



39

The completed diorama base ties together a number of textures and colors that will enhance the models being displayed.

dom ridges and valleys. But it's worth noting that you can actually make quite large waves if your scene requires them. In other dioramas I've made waves as high as 1" by applying multiple layers, **37**.

Once the silicone has dried, I sealed it by brushing on an acrylic varnish that I bought at the local art supply store, **38**. Besides the obvious benefit of giving the surface a very glossy, wet look, the varnish acts to protect the silicone from wear and tear. It also has a leveling effect that smooths out the ridges, making it look more like real water.

The final steps. Once all of the water had dried for a few days, I set about finishing off the diorama. I placed the bridge spans on the pontoons and mixed up a little more dirt to get the ends to be tightly pressed against the access ramp, **39**.

Then I used some thread to make the bracing ropes that hold the bridge spans in place. The Verlinden pontoon bridge set gives you instructions on the layout of these bracing ropes for the both the pontoons and the bridge spans. I had to improvise a bit due to the river wall but for the most part, I followed those instructions. These ropes really add an interesting 3-D effect to the front of the diorama.

Then I added the vehicles. Of course the fully sandbagged Sherman went right

in front on the bridge. I positioned it so the gun barrel's end was even with the base front in hopes that I won't bump it later. I just fixed it in place with white glue so I can remove it later if I have to make any repairs.

The Sherman coming down the ramp came from my collection, and photos of it can be seen in the gallery. As I mentioned earlier, I used this model because I accidentally broke the groundwork when I was taking photos of it for this book. So I was going to have to redo the groundwork anyway.

The M16 halftrack is heavily reworked from an old Tamiya kit. I built it a couple years ago and put it on a simple base since I knew that someday I'd use it in a diorama. It was common to see an anti-aircraft half-track or two parked right near a pontoon bridge to fend off Luftwaffe attacks.

Finally, I applied some pigments to the dirt parts of the ramp. These are same pigments used on the Shermans and the point was to link the tanks to the groundwork.

Conclusion. Although this was a full-blown and time-consuming project, it wasn't that hard. A big factor was selecting the right products for both the Sherman and the diorama. Then it was just a matter of treating each piece as a separate effort, and bringing it all together one step at a time.

60 YEARS OF SHERMAN



1 T6 Sherman Prototype



2 M4A1 Initial Production



3 Sherman II (very early)



4 Sherman III (very early)



5 M4A1 DV Sherman (early)



6 Sherman III



7 M4A2 Sherman



8 M4 Sherman w/ Wading Gear



9 M4 Sherman



10 Sherman VC Firefly



11 Sherman VC Firefly



12 Sherman V



13 M4A1 Sherman (early, upgraded)



14 M4A3(105) Sherman



15 M4A3(76)W Sherman



16 Sherman IIA



17 M4A2 Sherman (late)



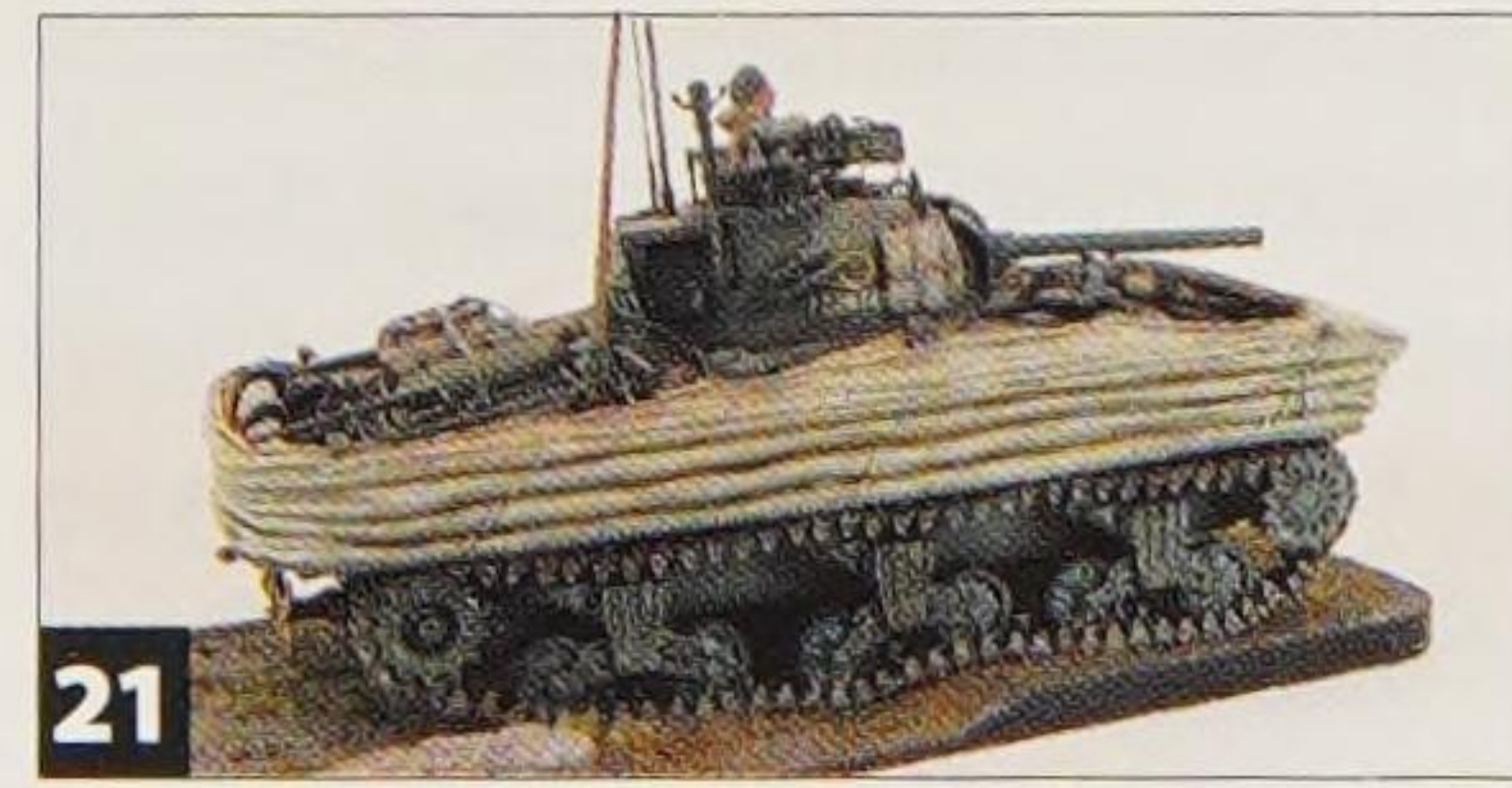
18 Sherman III



19 Sherman III



20 Beute Panzer VC Firefly



21 Sherman V Duplex Drive



22 M4A3(76)W Sherman



23 M4A3E2 Sherman Jumbo



24 M4E8(105) Sherman

Yes, I really did make all 48 of the Sherman models in this gallery.

No, I'm not completely insane.

Yes, I have a very supportive wife.

So how did I end up making 48 Sherman models? Well it's not like I woke up one morning and thought "gee I think I'll bang out half a hundred Shermans." In fact, when I started building armor models in 2001, I really didn't plan on making any Shermans. I'd only heard a little about the tank, and it wasn't a subject of interest. After a couple years, I decided

that I should build one Sherman to round out my armor collection so I made the M51 in the gallery.

Just one Sherman. But I like to do research on the subject I'm building and I love history. So in the process of making the M51, I got more interested in the Sherman and decided to do another one, this time a World War II U.S. Sherman. Oh no, now I was hooked. But still I was only building a few Shermans. What really changed everything was when I went to the 2004 IPMS U.S. National Contest in Phoenix. There, I saw a number of collections entered in the contest and I was

intrigued. I went to the next U.S. IPMS National Contest in Atlanta, and this time, I was really caught by how interesting it was to see a group of similar models together. There I found out that the 2007 IPMS National Competition was going to be held in Anaheim, which is only a few minutes from my house. So I thought that if I was ever going to make a collection, this was the time to do it.

Just one collection of Shermans.

I decided to make a collection of Sherman gun tanks (i.e. those whose primary purpose is firing their main weapon), and I would try to represent as many different

SHERMANS IN 48 MODELS



25 Sherman Firefly IC Hybrid "Tulip"



26 Sherman Firefly IC



27 M4A2(76) Sherman "Emcha"



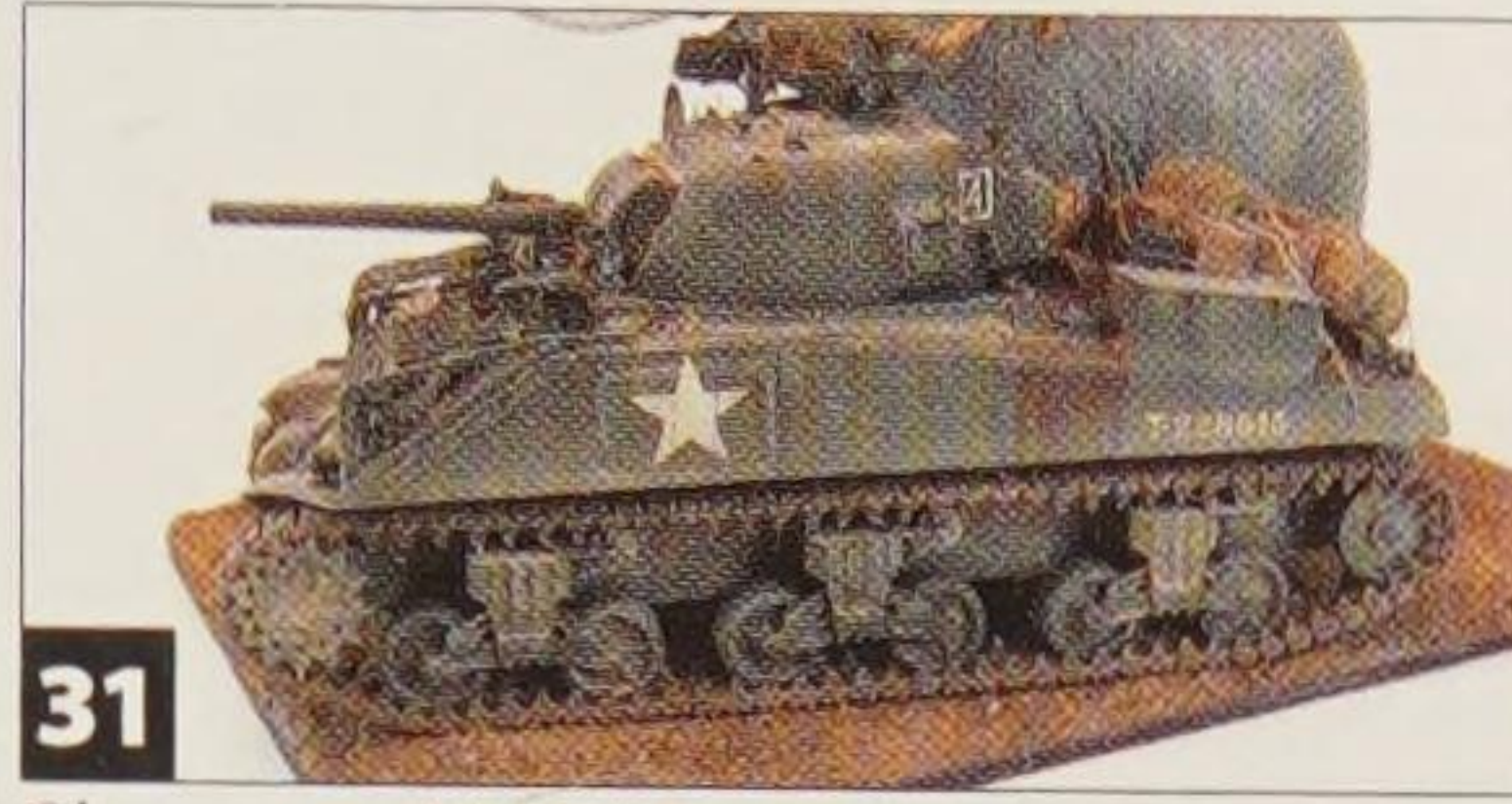
28 M4A3 Sherman



29 M4A3 Sherman



30 M4A4 Sherman



31 Sherman V DV



32 M4A3(76)W HVSS Sherman



33 M4A3 Sherman w/T6 Floatation



34 M4 Composite Hull Sherman



35 M4A2 Sherman



36 M4A3(75) HVSS Sherman



37 M4A3E8 Sherman



38 POA-CWS-H5 Sherman Flame Tank



39 AMX Sherman



40 M50 Sherman (very early)



41 M4A1E9-76 Sherman



42 M4A1E4 Sherman



43 M1 Super Sherman



44 M4A3E4 Sherman (Kelly's Heroes)



45 M51 Sherman



46 M50 Sherman



47 Sherman Repotenciado



48 M60 HVMS Sherman

variants as possible. Still I didn't envision 48 models! But as I got building and researching, it became clear to me that the story of the Sherman wasn't just the variants, it was also where they were used. So I further expanded my ideas for my collection. Finally though, I realized that I was forgetting the most important element, the people who fought in the Shermans. In other words, the story of the Sherman is not complete without factoring in the different countries that operated it. So now I had a vision and I made list of what I wanted to build to tell the story.

I determined that I would need to build 44 Shermans. I also realized that I'd need to

have figures on each them to bring them to life and that I would have to at least place each of them on a base to provide some context. I had a plan. But when the IPMS Nationals came around in 2007, I only had 43 done with number 44 still on the work bench. Turned out it was enough and I was truly shocked and honored to win "Best of Show" at the competition.

Just one more Sherman after that. Once it was over, I decided I'd finish Sherman 44 and that was it—I was done making Sherman tanks. I really need to stop saying things like that. Because all kinds of cool Shermans came to market, and I couldn't resist.

First the British Sherman II DV—the first Sherman used in combat—was rendered in plastic. Then a resin conversion for the Sherman T6 prototype came out. This was followed by the M4A1 Initial Production that British Prime Minister Winston Churchill actually climbed on. Before I knew it, I had built four more Shermans. But that's it, right?

And four more for good measure. Oh wait, I just built another four for this book. Well, if I've learned anything, it's that I will no longer say I won't build another Sherman because I probably will.

—Jim Wechsler

Sherman T6 Prototype

U.S. Army
United States, 1941

- Initial prototype for the Sherman
- Short barrel required counter weights
- No co-driver's hatch
- Side hull hatches carried over from M3 Lee design



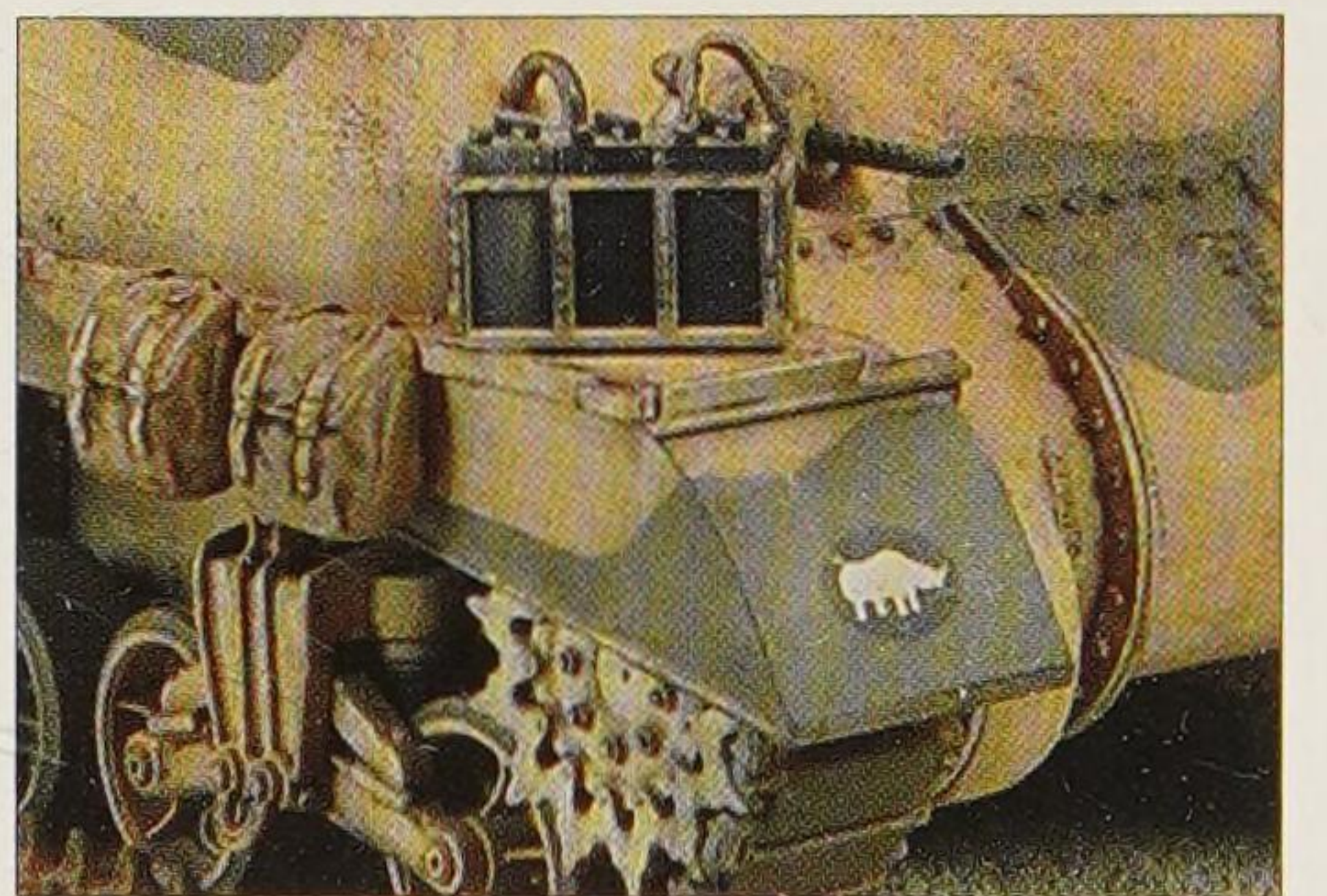
M4A1 Initial Production

British Army
Great Britain, 1942



- "Michael" was the first Sherman sent to Great Britain
- This tank was personally inspected by Prime Minister Winston Churchill
- Hull-mounted, fixed .30 caliber MGs later deleted
- "Pepper pot" exhausts unique to the early variants





- First use of the Sherman was with the British army at the battle of El Alamein, 1942
- Direct vision slots for the driver and co-driver
- M3 Lee/Grant VVSS suspension
- U.S. designation would be M4A1 DV

Sherman II (very early)

British Army
North Africa, 1942



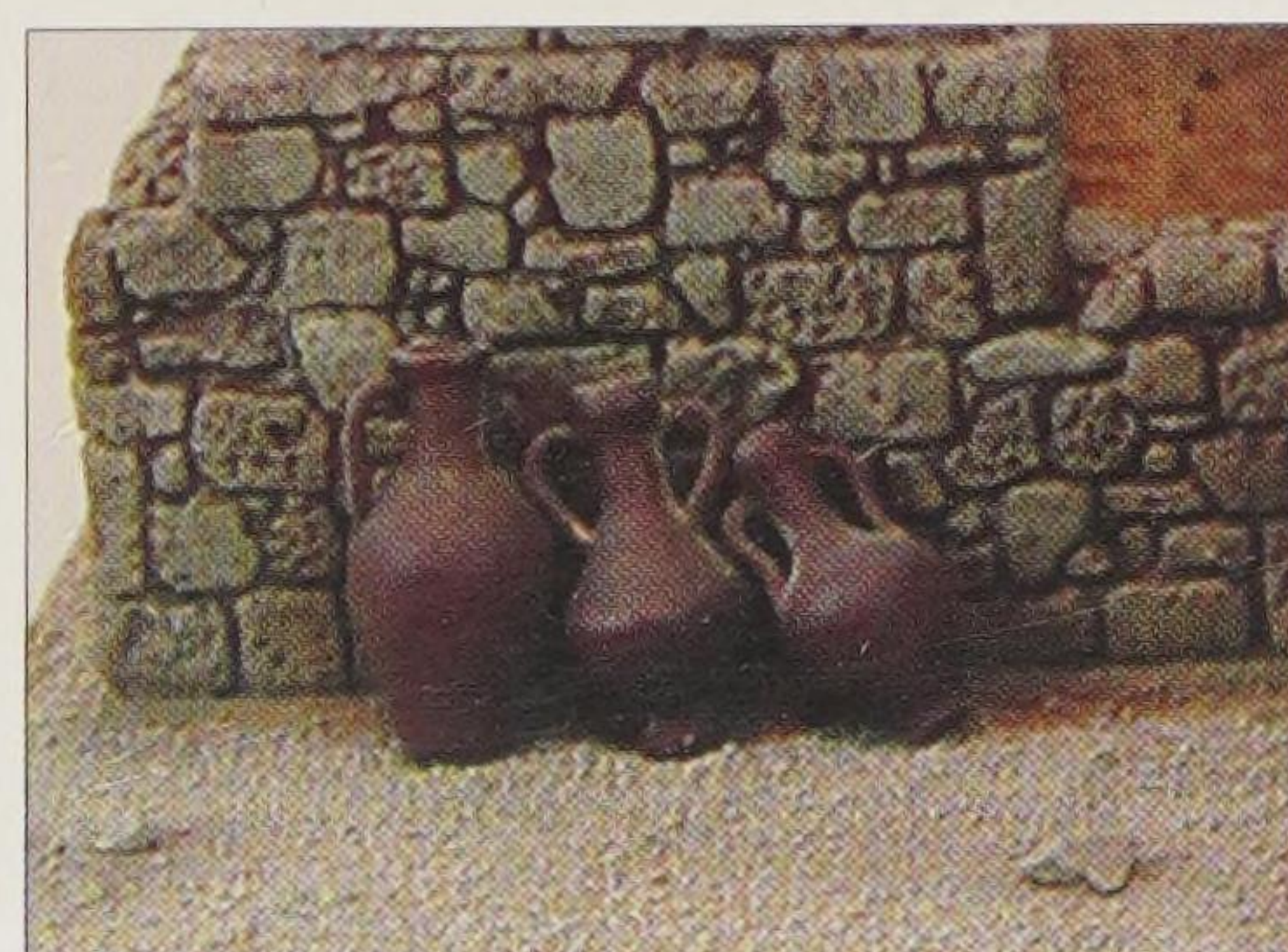
Sherman III

(very early)

British Army
North Africa, 1942



- (U.S. designation would be M4A2)
- First use of the Sherman was with the British army at the battle of El Alamein, 1942
- Direct vision slots for the driver and co-driver
- M3 Lee/Grant VVSS suspension



5

M4A1 DV Sherman (early)

U.S. Army
Sicily, 1943



- M3 Lee/Grant VVSS suspension
- Direct vision slots for driver and co-driver
- Early-style .50-caliber ammo box





Sherman III

British Army
Italy, 1943

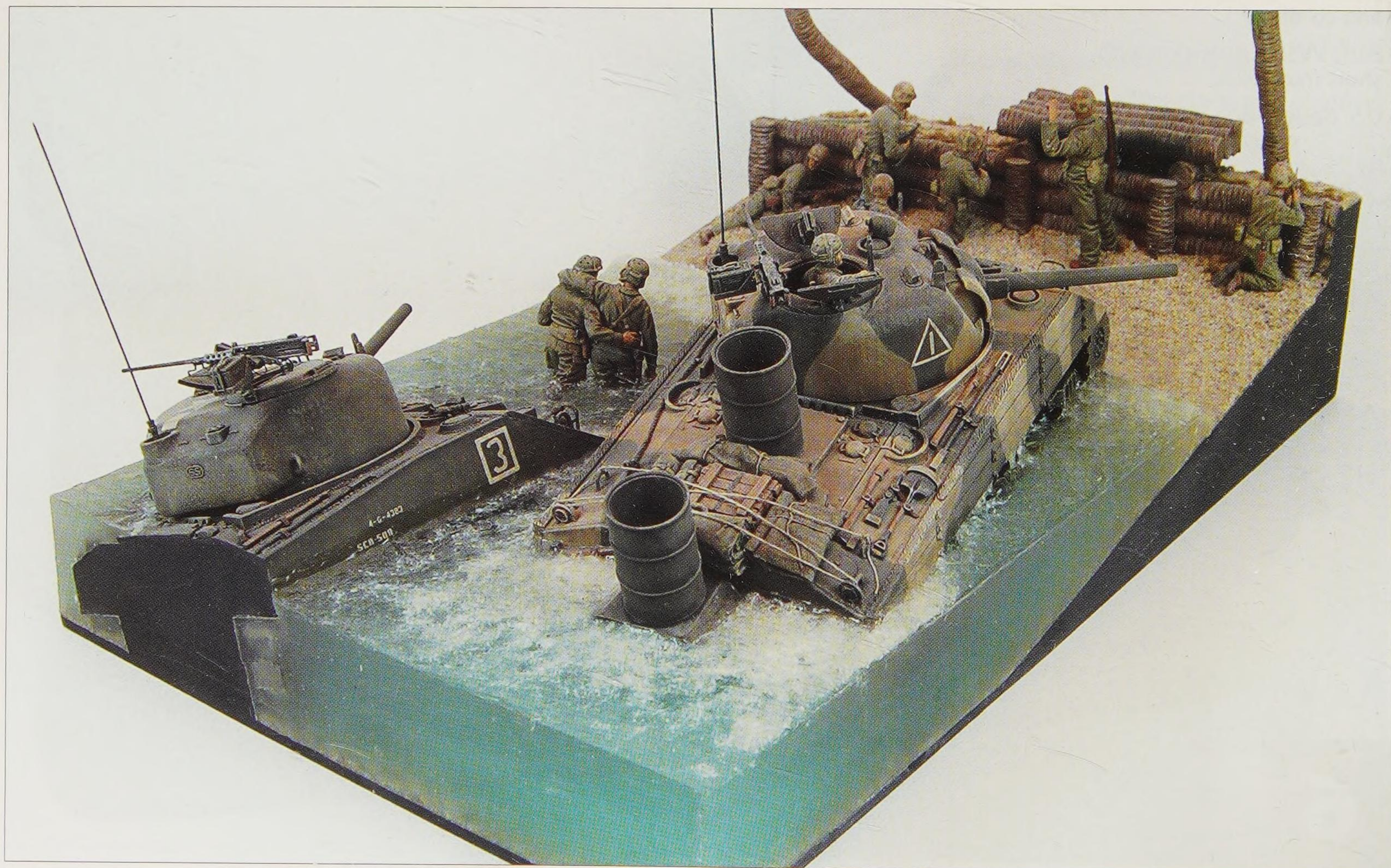
- "Spotted" Camo unique to this tank
- Direct vision slots for the driver and co-driver
- Early VVSS suspension with short track skids
- U.S. designation would be M4A2



M4A2 Sherman

U.S. Marine Corps
Marshall Islands, 1944

- Wood plank armor for protection against magnetic mines
- Wading gear made in the field using 55-gallon oil drums





M4 Sherman with wading gear

U.S. Army
Normandy, 1944

- Wading gear used for beach landings
- Canvas covers to prevent water from going into tank
- Black "Bostik" to seal gaps and openings
- Used on D-Day, June 6, 1944



9

M4 Sherman

U.S. Army
France, 1944



- Early-style narrow gun mantlet
- Cullin hedgerow cutter for Bocage in Normandy
- Appliqué armor added during remanufacture to protect vulnerable areas



Sherman VC Firefly

British Army
France, 1944

10



- British-developed 17 pounder (76.2mm) anti-tank gun fitted to Sherman V
- Most powerful anti-tank version of the Sherman used in WWII
- Barrel camouflage intended to disguise the Firefly to look like a standard Sherman



Sherman VC Firefly

British Army
France, 1944

- British-developed 17 pounder (76.2mm) anti-tank gun fitted to Sherman V
- "Houseboat" fittings for mounting a canopy over the tank to disguise it as a lorry (truck)
- Barrel camouflage intended to disguise the Firefly to look like a standard Sherman



Sherman V

Canadian Army
France, 1944

12



- U.S. designation would be M4A4
- British-style cupola fitted to tank commander's hatch



M4A1 Sherman

(early, upgraded)

13

U.S. Army
Southern France, 1944



- M3 Lee/Grant VVSS suspension
- Appliqué armor added to protect weak spots





- 105mm Howitzer version used for infantry support
- White wash added for winter operations

M4A3(105) Sherman

U.S. Army
Belgium, 1944



M4A3(76)W Sherman

U.S. Army
France, 1944

15

- 76mm T23 Turret
- Sandbags for added protection from Panzerfaust
- Extended end connectors (Duckbills) added to tracks for reduced ground pressure



Sherman IIA

Polish Army
Belgium, 1944

16

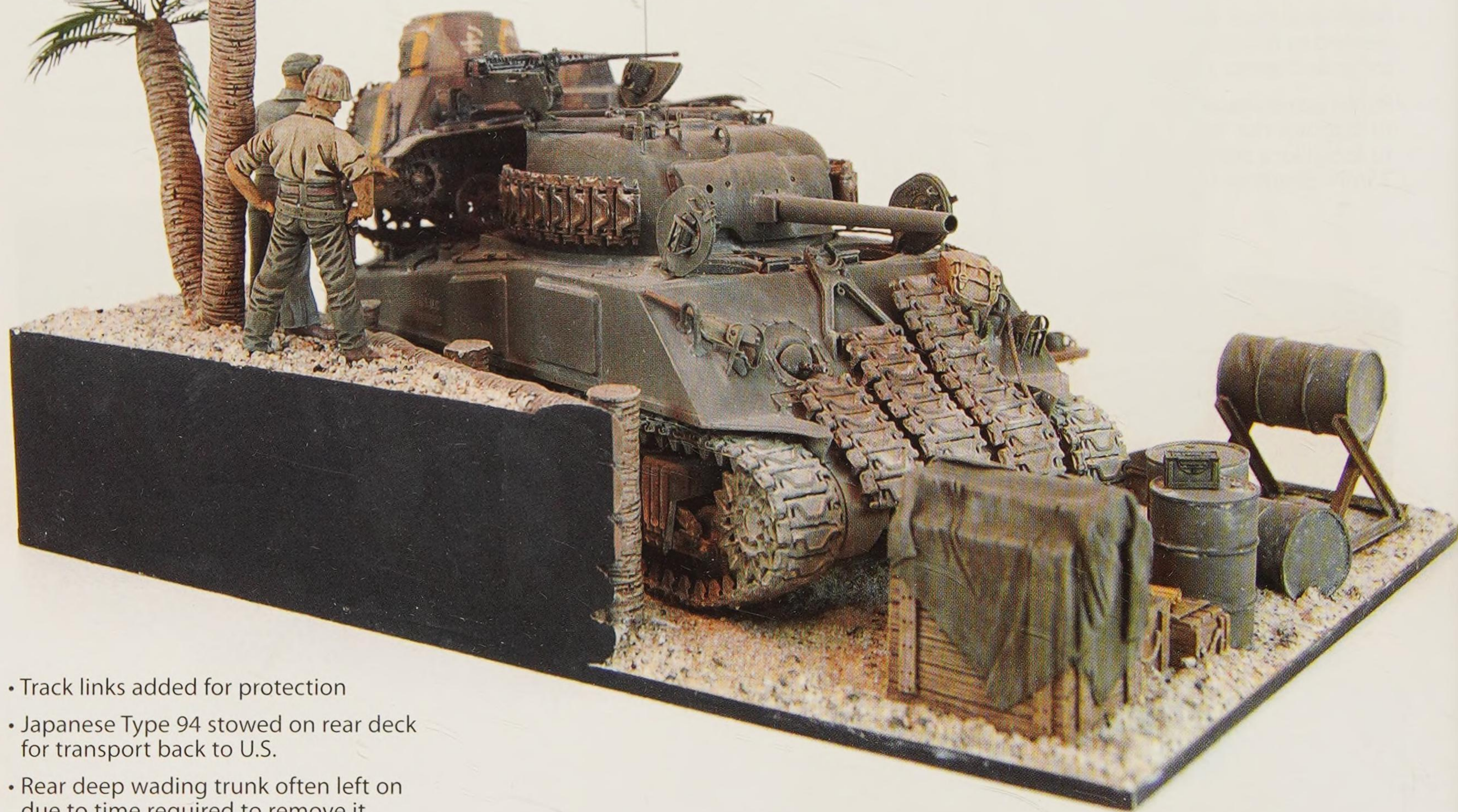
- U.S. designation would be M4A1(76)
- Additional track links welded to hull and turret for added armor protection
- Barrel camouflage intended to disguise the 76mm gun to look like a standard 75mm Sherman barrel



M4A2 Sherman (late)

U.S. Marine Corps
Peleliu, 1944

17



- Track links added for protection
- Japanese Type 94 stowed on rear deck for transport back to U.S.
- Rear deep wading trunk often left on due to time required to remove it

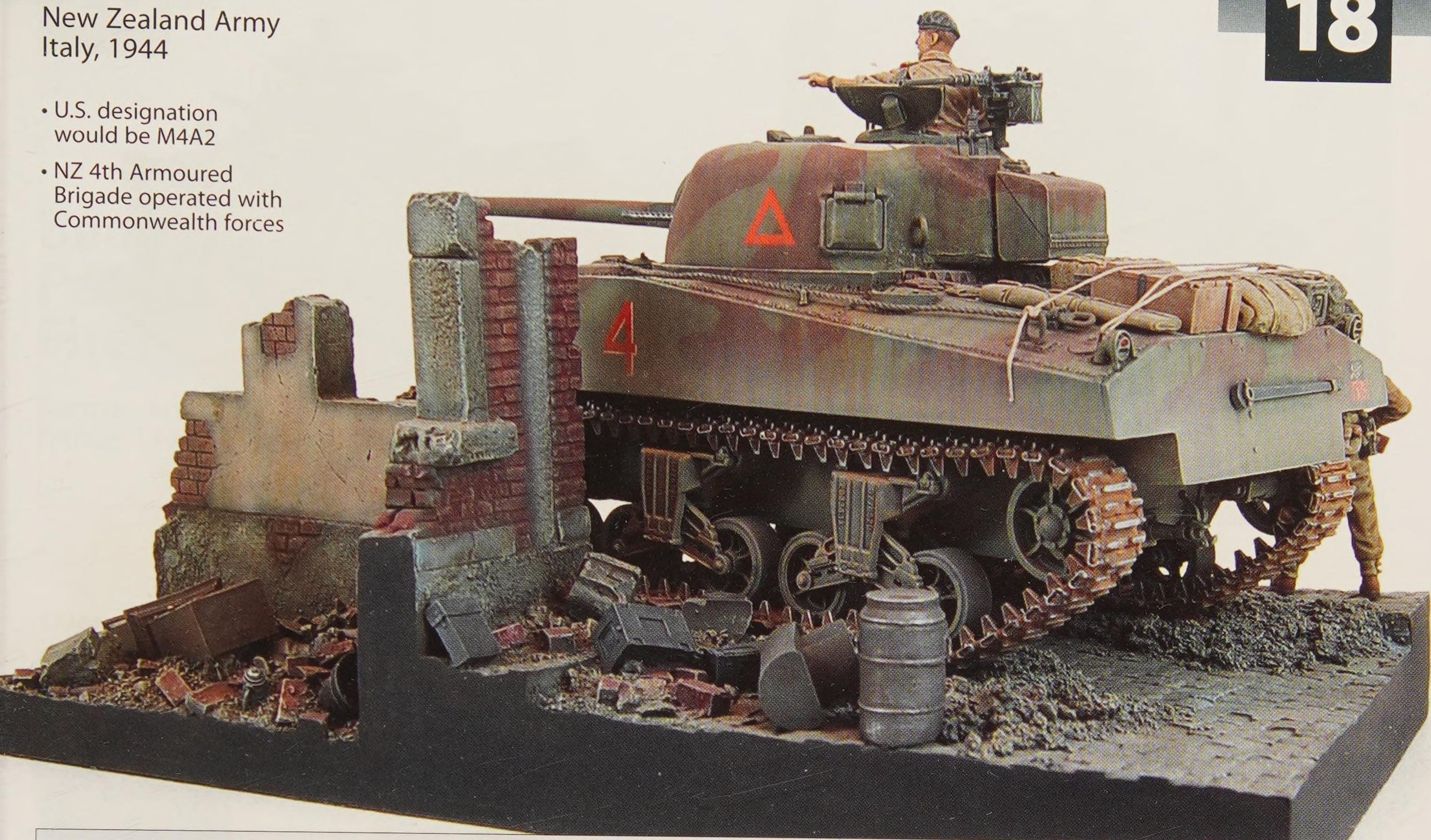


Sherman III

New Zealand Army
Italy, 1944

- U.S. designation would be M4A2
- NZ 4th Armoured Brigade operated with Commonwealth forces

18

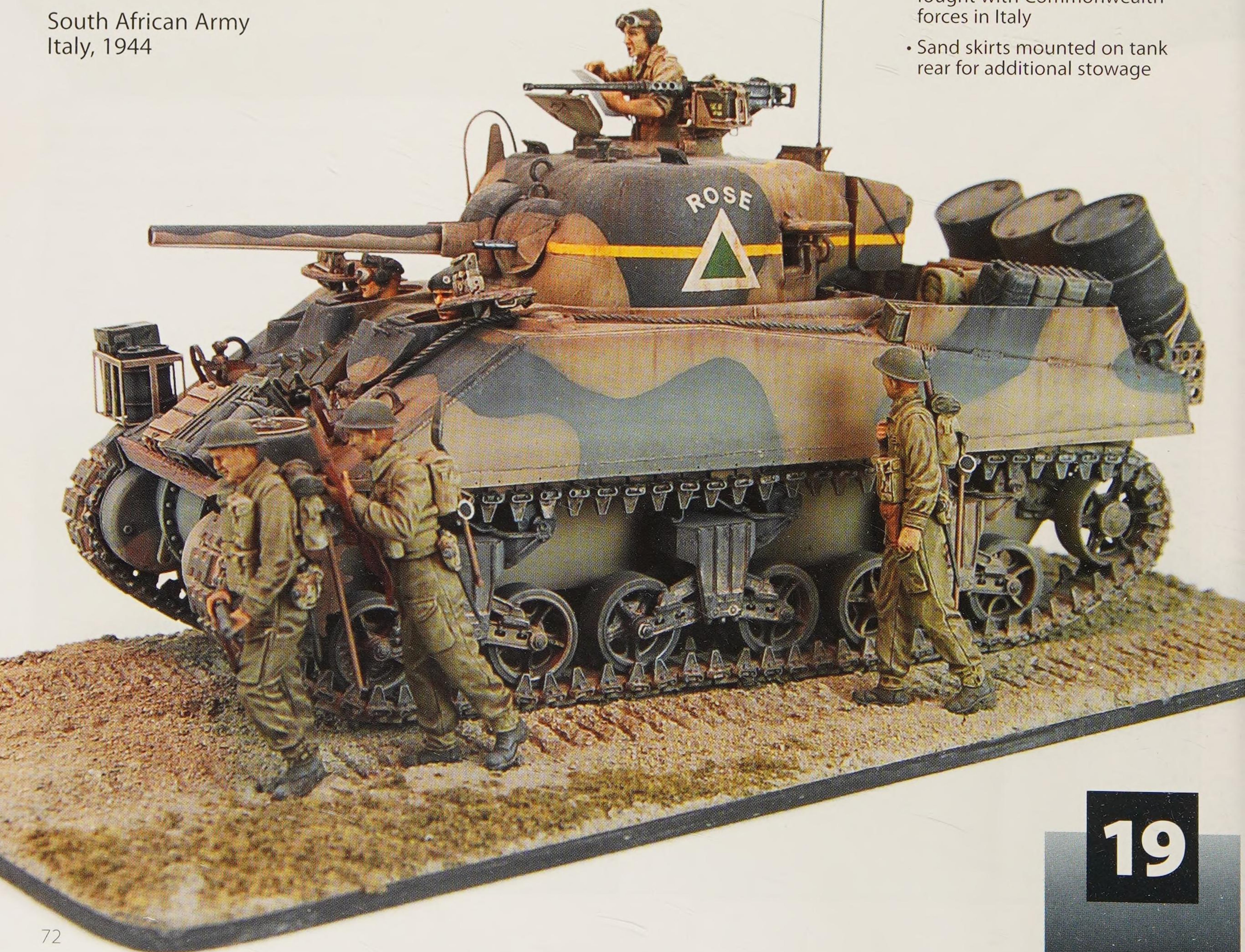




Sherman III

South African Army
Italy, 1944

- U.S. designation would be M4A2
- Pretoria Tank Regiment, 6th South African Armored Division fought with Commonwealth forces in Italy
- Sand skirts mounted on tank rear for additional stowage

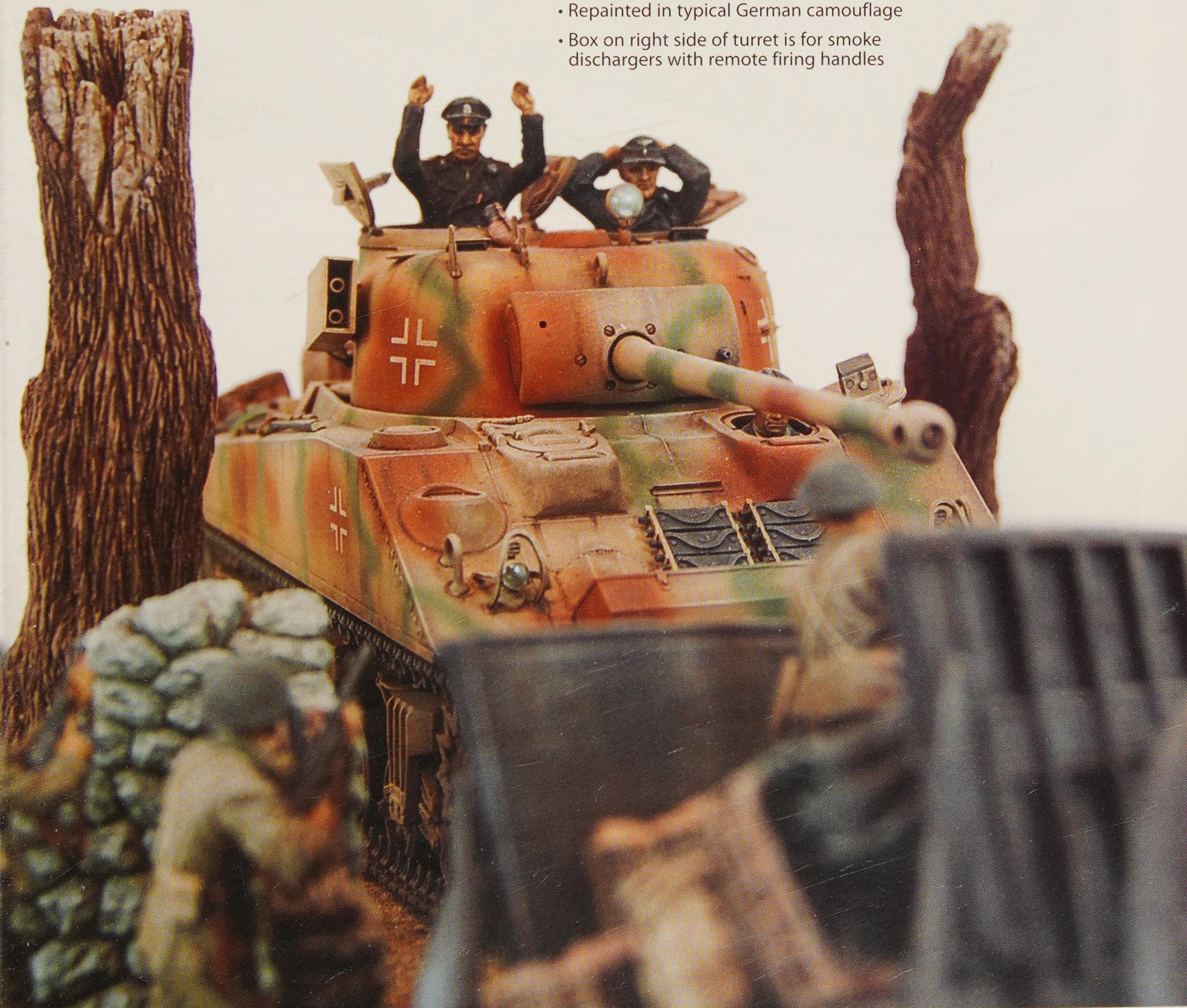


Beute Panzer VC Firefly

German Army
France, 1944



- Captured VC Firefly used by German army
- Repainted in typical German camouflage
- Box on right side of turret is for smoke dischargers with remote firing handles

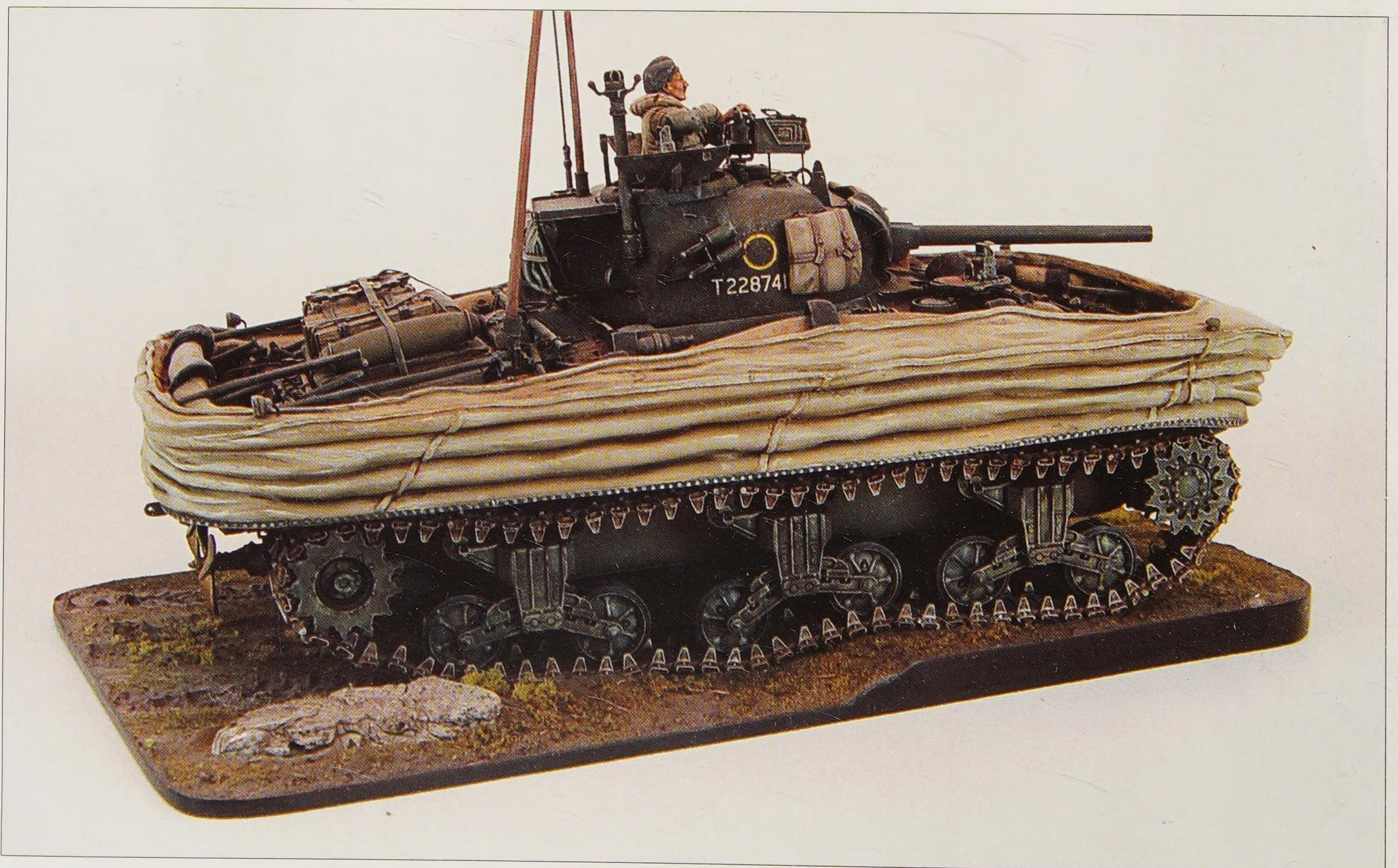


- "Swimming Sherman" intended for amphibious operations
- First used in Normandy invasion where it was highly successful except on Omaha beach where high seas sank most of them
- Used in Holland and in crossing the Rhine
- Only "funny" intended as a gun tank



Sherman V Duplex Drive

British Army
Netherlands, 1945



M4A3(76)W Sherman

U.S. Army
Germany, 1945



- 76mm T23 turret
- Logs for unditching in mud
- Sandbags for added protection from Panzerfaust

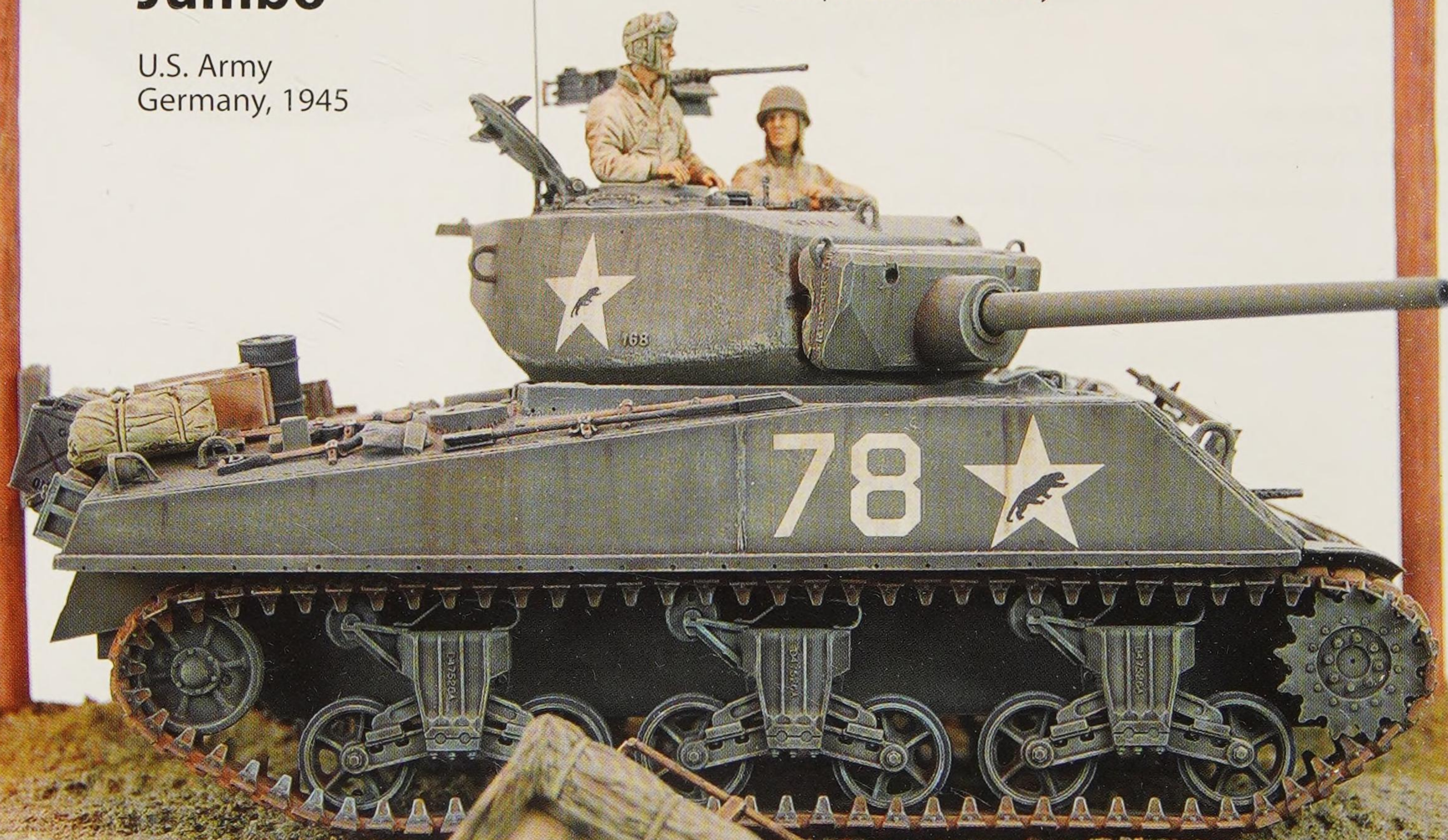




M4A3E2 Sherman Jumbo

U.S. Army
Germany, 1945

- Special "assault" version with greatly increased hull and turret armor
- Re-equipped with 76mm gun
- "Leaping tiger" in the white stars unique to U.S. 6th Army





M4E8(105) Sherman

Free French Forces
Germany, 1945

- 105mm howitzer SPG
- E8 indicated wide track HVSS suspension
- Free French forces equipped with U.S. tanks
- Tank is using river bed for increased elevation of gun for artillery support

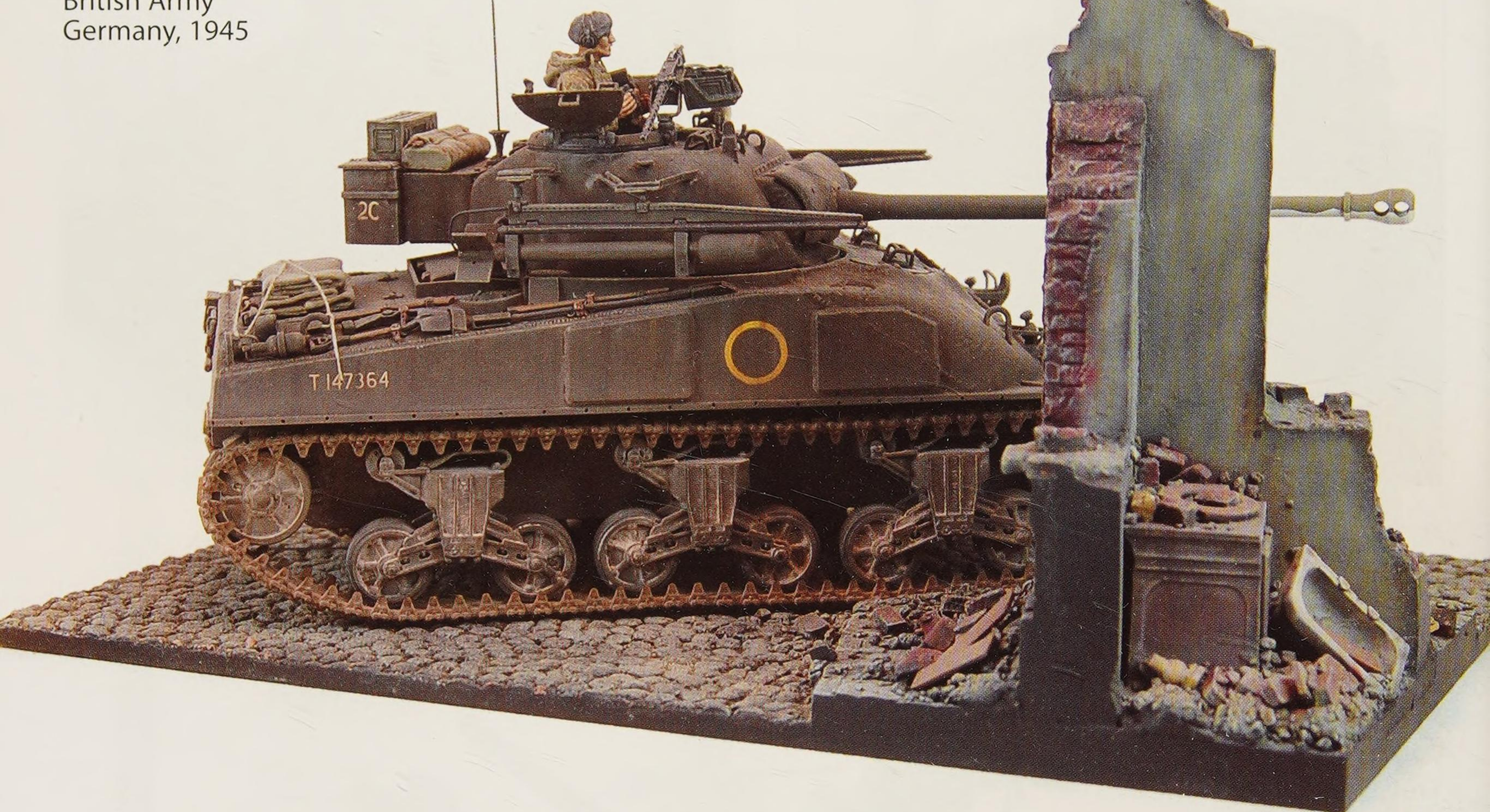


Sherman Firefly IC Hybrid "Tulip"

British Army
Germany, 1945

- British-developed 17 pounder (76.2mm) anti-tank gun fitted to Sherman I Hybrid
 - Hybrid hull has cast front mated to welded rear
- "Tulip" was nickname for tanks with Typhoon rockets mounted to turret (unique to Coldstream Guards)

25



Sherman Firefly IC

Czech 1st Brigade
Germany, 1945

- British-developed 17 pounder (76.2mm) anti-tank gun fitted to Sherman I (M4)
- Free Czech forces operated with Commonwealth

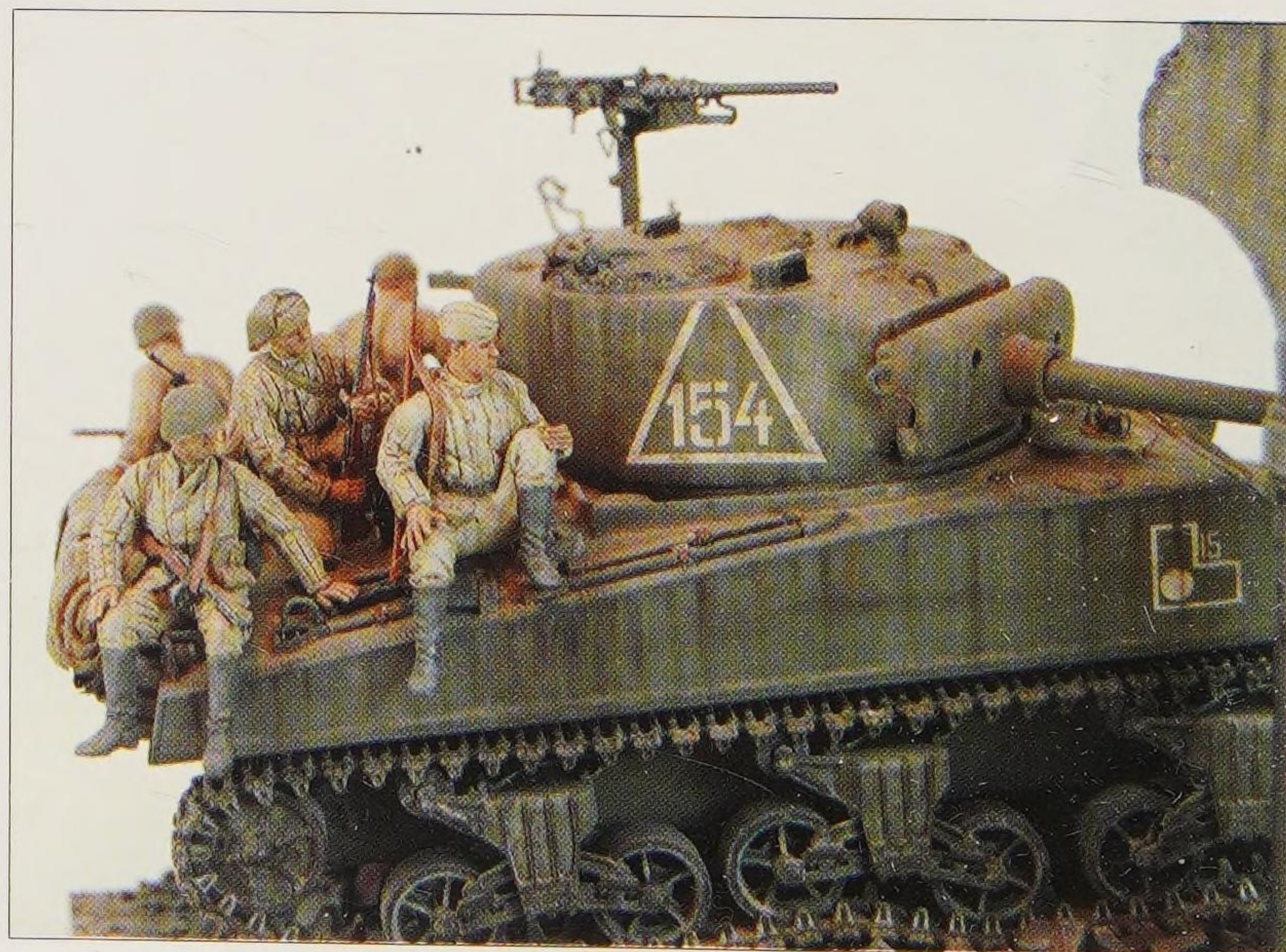
26



M4A2(76) Sherman "Emcha"

Red Army
Austria, 1945

- Many Shermans supplied to Soviet Union during WWII
- "Emcha" is Soviet slang term for M4
- Sherman was well liked by Red Army for its durability and reliability
- Infantry assault tank riders common on Red Army WWII tanks due to lack of transport vehicles

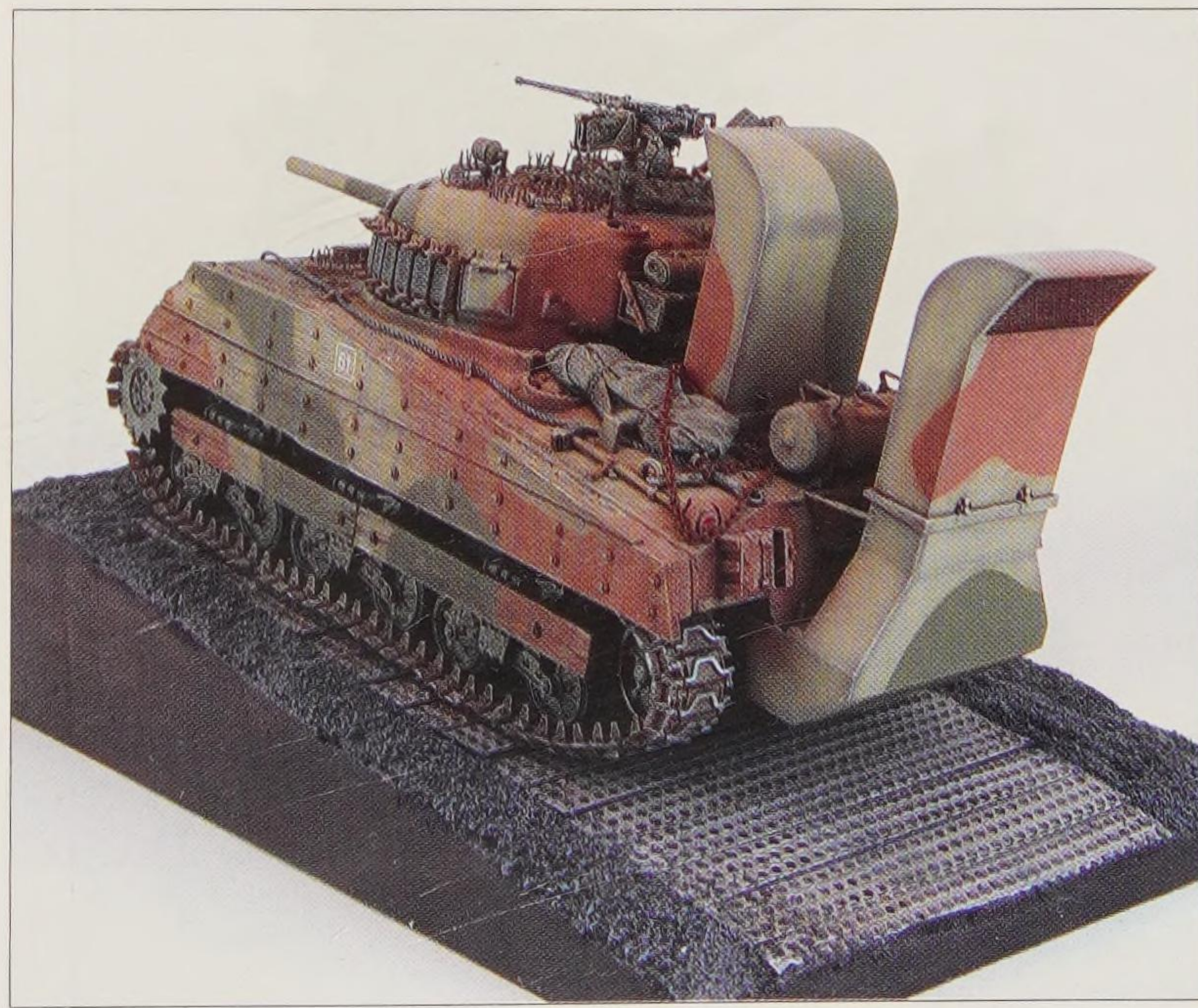


M4A3 Sherman

U.S. Marine Corps
Iwo Jima, 1945



- Wood/concrete appliqué armor to protect against magnetic charges
- Wood boards over suspension to prevent suicide attacks
- 3-inch nails on hatches to prevent suicide attacks with satchel charges
- Deep wading stacks to allow beach offloading from landing craft



M4A3 Sherman

U.S. Army
Germany, 1945

- Late production with large hull hatches for easier egress
- "Wet" ammunition stowage to prevent catastrophic explosions



M4A4 Sherman

Chinese Nationalist Army
Burma, 1945



- "Tiger-Face" Sherman
- 1st Chinese Tank Battalion

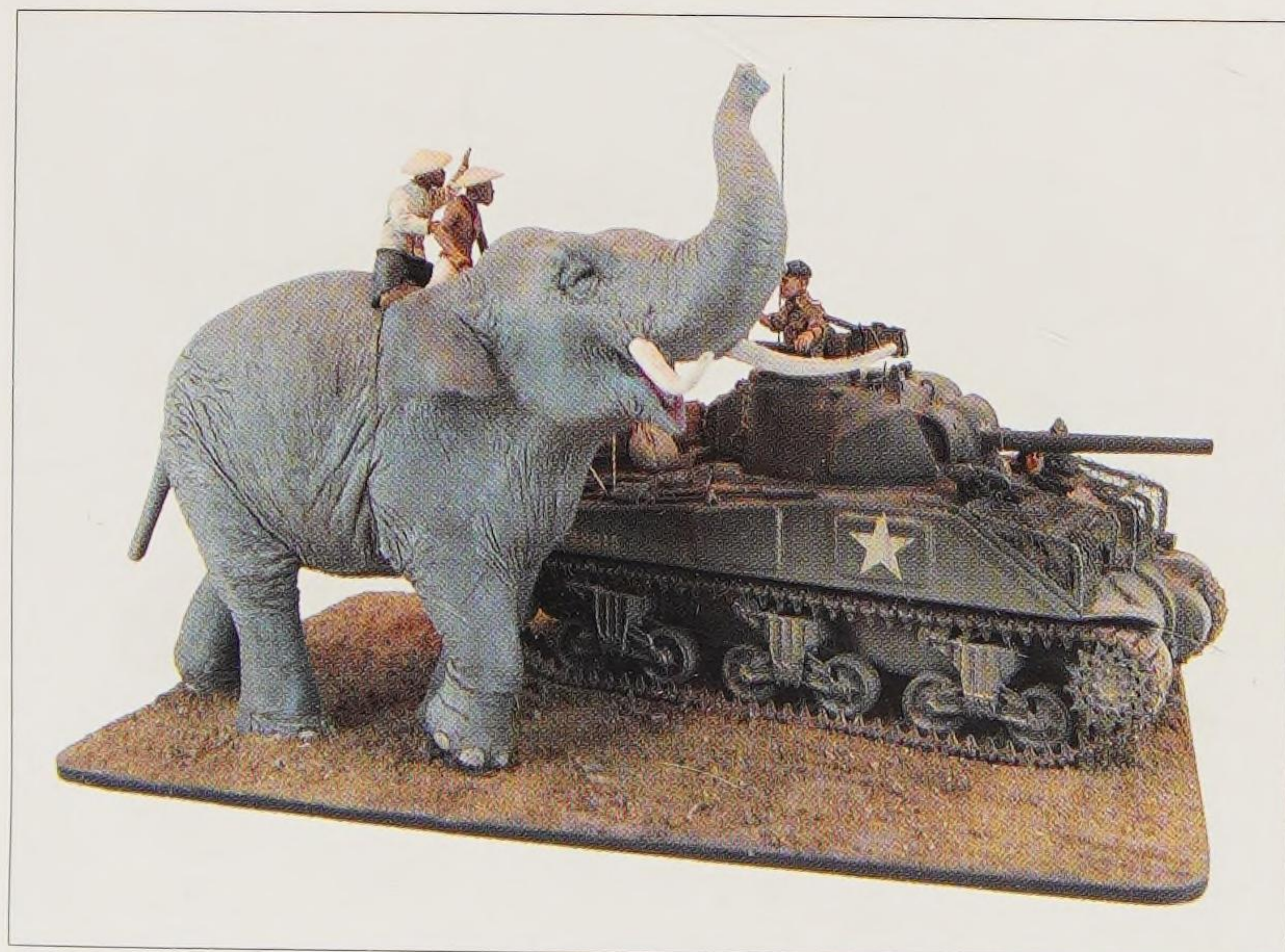


Sherman V DV

British Army
Burma, 1945

31

- M4A4 Direct Vision (DV)
- Front frame and chicken wire to protect against Japanese "sticky bombs"
- Field-made stowage bins
- Direct vision ports covered by appliqué armor



M4A3(76)W HVSS Sherman

U.S. Army
Germany, 1945

32



- Wide-track HVSS suspension for improved floatation in soft ground
- Appliqué armor made of metal salvaged from scrapped tanks (both Allied and Axis)
- Thunderbolt VII was Col. Creighton Abrams' (namesake of the M1 Abrams) last tank of WWII



M4A3 Sherman with T6 Floatation

U.S. Marine Corps
Okinawa, 1945

33



- T6 system developed by USMC to allow tank to fire weapons while at sea
- Pontoons were filled with foam and designed to be jettisoned on the beach



- Used by 6th Marines on Okinawa
- Generally successful but low ground clearance caused some tanks to be stuck on the reefs



M4 Composite Hull Sherman

U.S. Army
Okinawa, 1945

34

- Composite hull has cast front mated to welded rear
- One of the last variants of the Sherman manufactured
- "Rock Tank" was a decoy carved out of the Okinawa rock by the Japanese

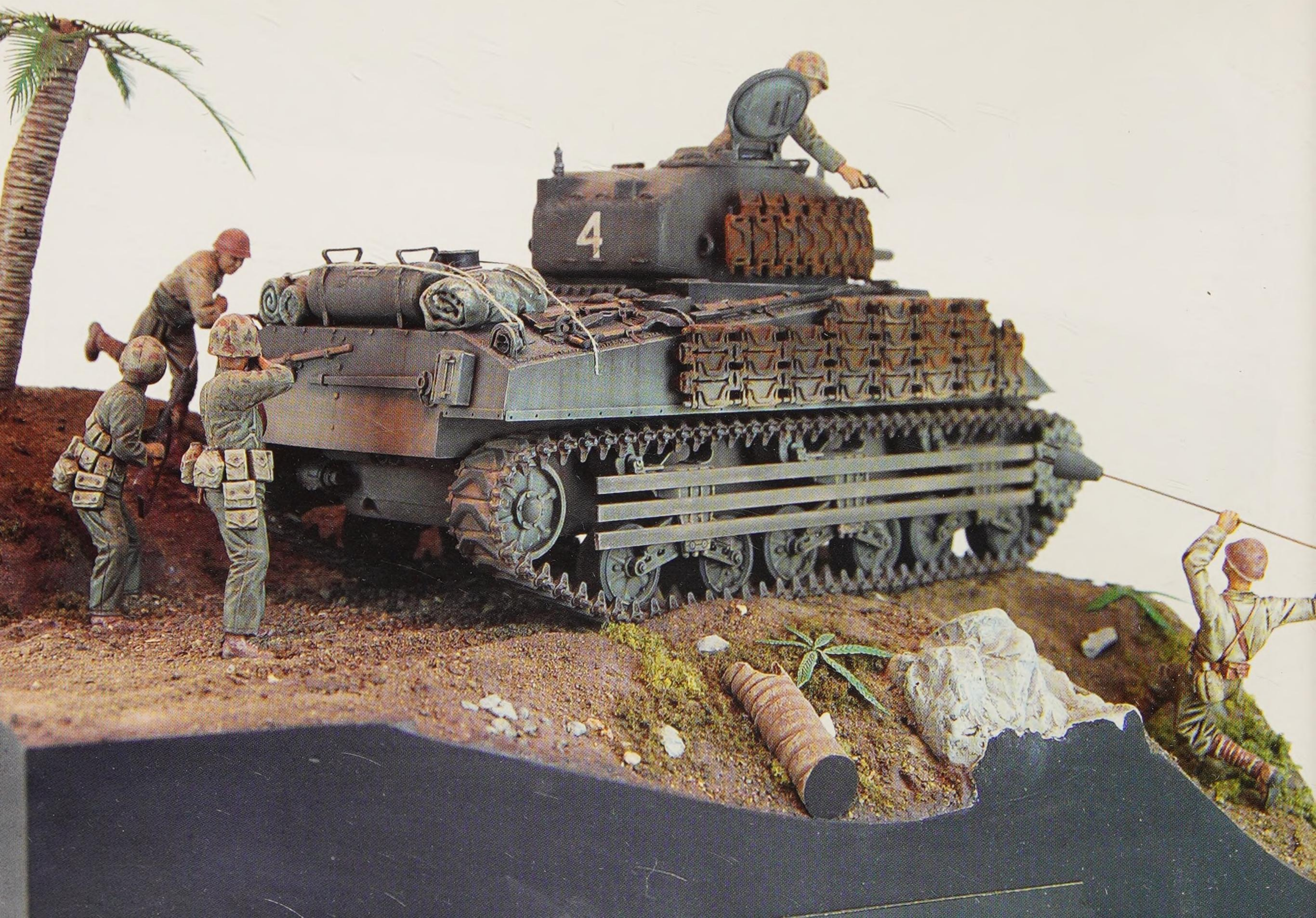


M4A2 Sherman

U.S. Marine Corps
Okinawa, 1945

35

- Track links added for protection
- Wood slats mounted on suspension to protect against satchel charges
- Mid-production Sherman upgraded with later vision cupola

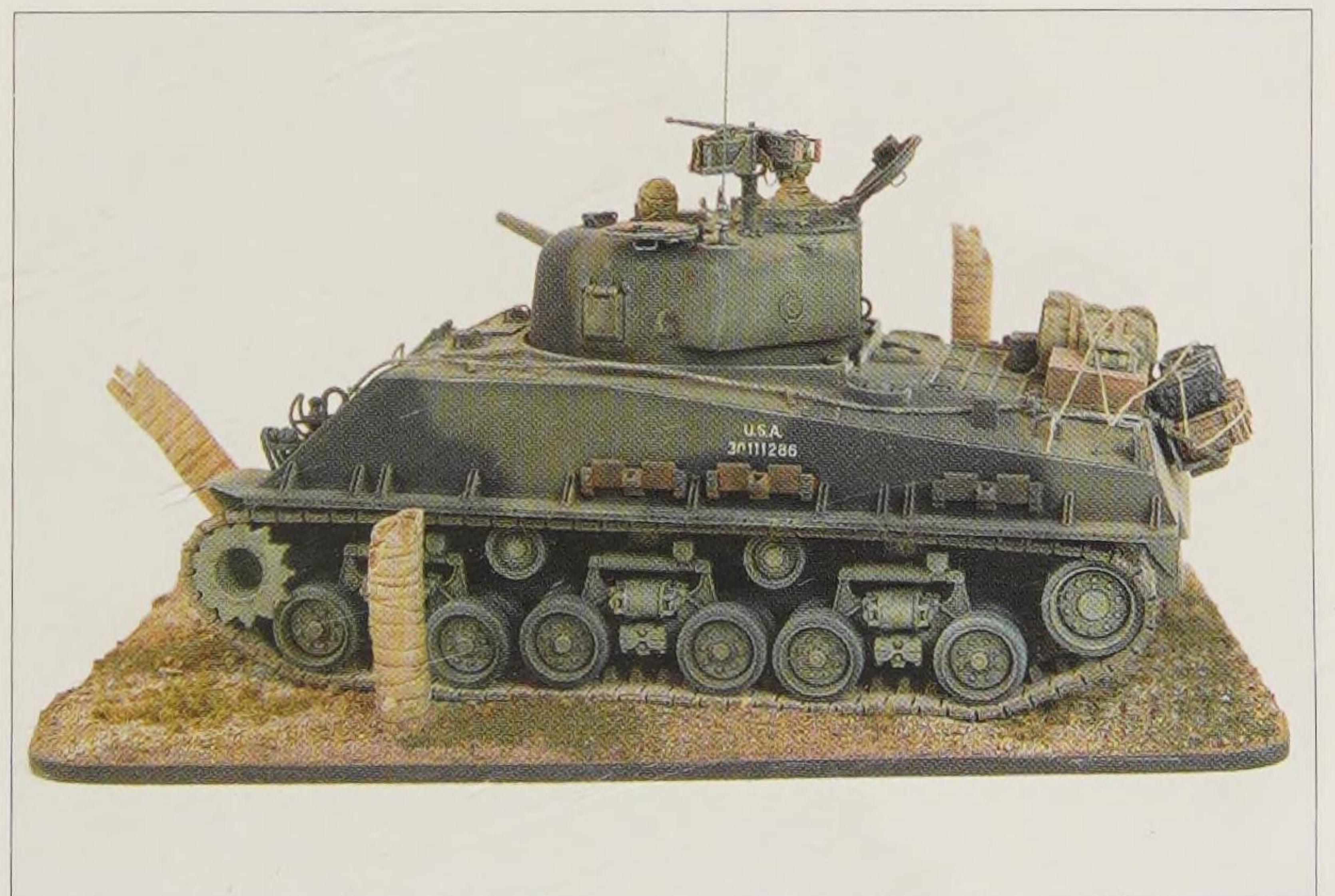


M4A3(75) HVSS Sherman

U.S. Army
Philippines, 1945



- Wide-track (HVSS) version of standard M4A3
- About 500 built but rarely photographed
- Used in Philippines and intended for use in invasion of Japanese home islands



M4A3E8 Sherman

U.S. Army
Korea, 1951



- "Tiger-face" Sherman
- E8 was experimental designation for HVSS suspension



POA-CWS-H5 Sherman Flame Tank

U.S. Army
Korea, 1951

38



- Additional flamethrower barrel added based on WWII experience
- Basic tank is an M4A3E8(105)
- Primarily used for infantry support



AMX Sherman

Egyptian Army
Egypt, 1958

39



- M4A4 (long hull) re-engined with diesel engine from M4A2
- Turret replaced with turret from AMX-13 French light tank
- Saw combat in 1956 Sinai fighting
- Design was retired from service early due to technical problems and availability of Soviet T-54/55 tanks



M50 Sherman

(very early)

Israeli Defense Forces
Israel, 1961



- M4A4T-based. M4A4 (long hull) re-engined with radial engine from M4A1
- French CN 75-50 75mm gun fitted into modified turret
- Blue "X" with white border used for aerial recognition

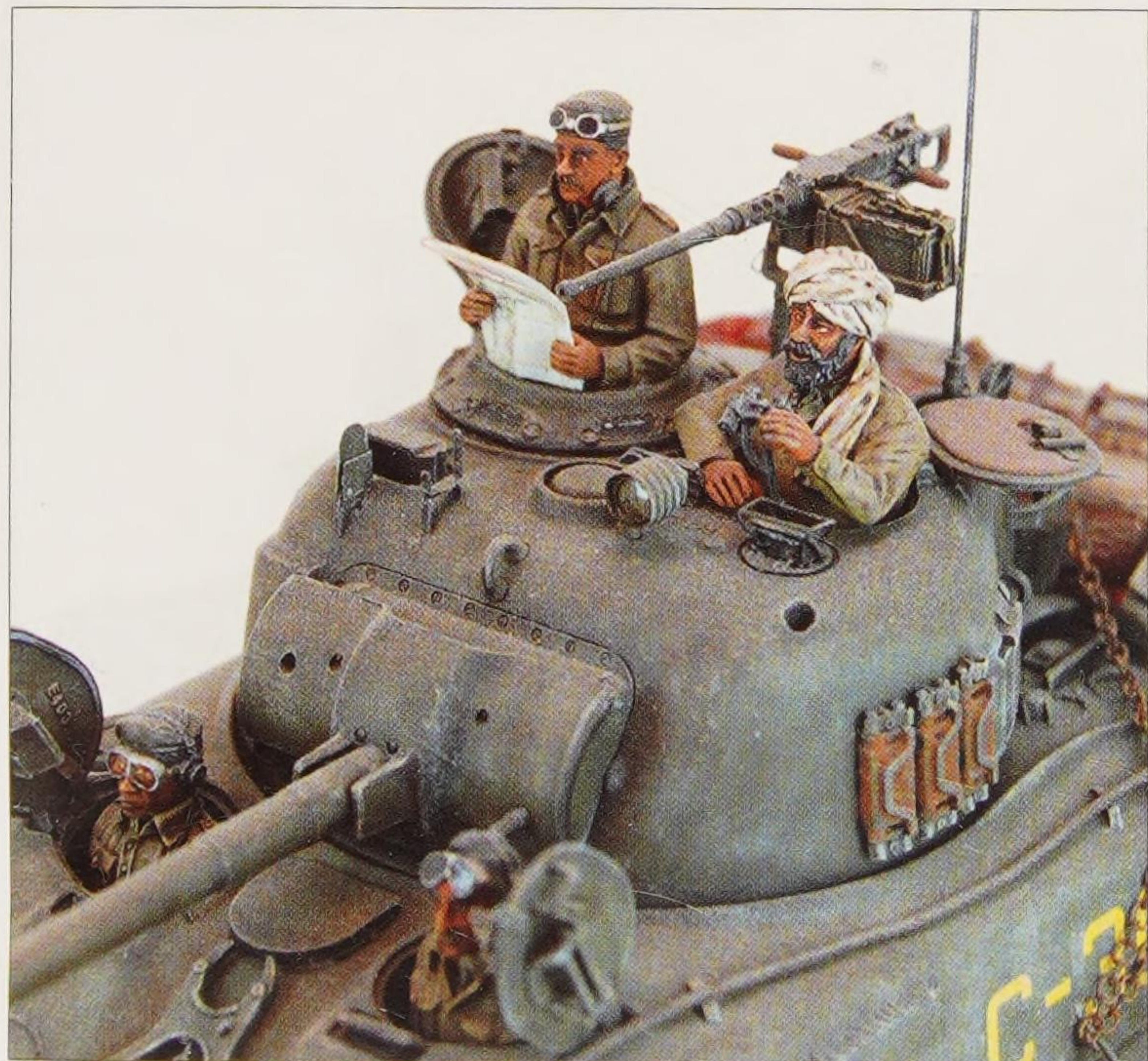


M4A1E9-76 Sherman

Indian Army
India, 1965



- 76mm gun mounted in original 75mm turret
- E9 modification to suspension to allow inner row of duckbills to lower ground pressure
- Retrofits were developed during WWII but not used until postwar remanufacturing
- About 200 Shermans were sold to India



M4A1E4 Sherman

Pakistani Army
Pakistan, 1965

42



- E4 modification—76mm gun mounted in original 75mm turret
- E9 modification to suspension to allow inner row of duckbills to lower ground pressure
- Retrofits were developed during WWII but not used until postwar remanufacturing
- About 500 Shermans were sold to Pakistan



M1 Super Sherman

Israeli Defense Forces
Israel, 1967

43



- U.S. designation would be M4A1E8
- Israeli smoke dischargers added to turret
- White stripe with black border used for aerial recognition

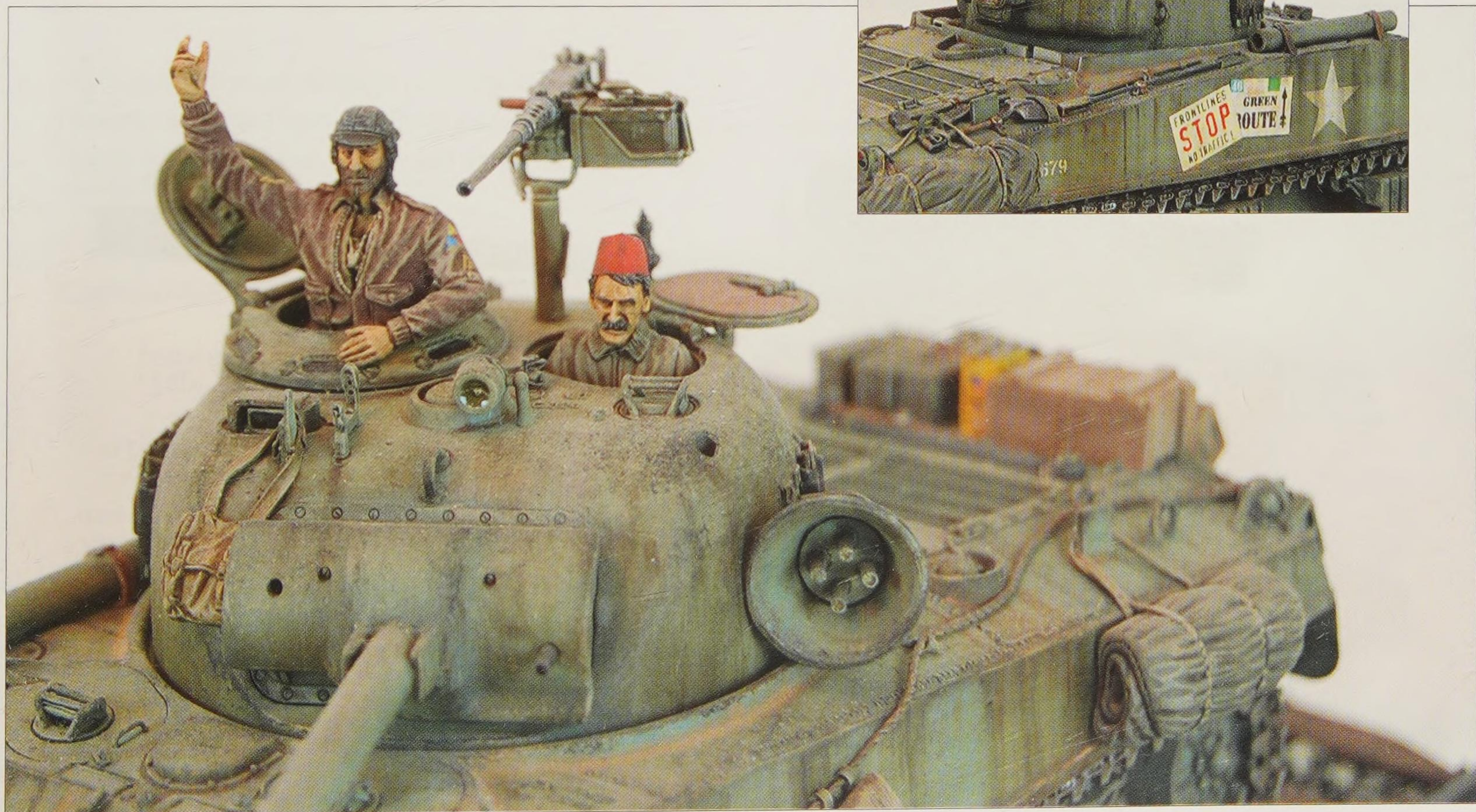


M4A3E4 Sherman (Kelly's Heroes)

Yugoslav Army
Yugoslavia, 1970



- E4 designation is for 76mm gun refitted into 75mm turret
- Yugoslavia procured a number of remanufactured Shermans after WWII
- These tanks were used in the movie "Kelly's Heroes"
- Loudspeaker added for the movie and the crew is Oddball's crew from the movie



M51 Sherman

Israel Israeli Defense Forces
Israel, 1973

45



- Up-gunned with shortened version of French CN 105 F1 105mm gun
- Large muzzle brake required to keep recoil to acceptable levels
- Versions remained in service into the 1990s with the Chilean Army

M50 Sherman

South Lebanese Army
Lebanon, 1981



- Ex-Israeli M50 made available to SLA (Israeli allies)
- French CN 75-50 75mm gun fitted into modified turret
- HVSS, Cummins diesel engine, and Israeli stowage added during manufacture



Sherman Repotenciado

Argentine Army
Argentina, 1993

47

- Upgraded VC Firefly
- Argentine-produced 105mm cannon based on French design
- New, French-developed diesel engine
- Turret mounted auxiliary fuel tank
- Turret stowage baskets



M60 HVMS Sherman

Chilean Army
Chile, 2002



- Ex-Israeli M50 Sherman sold to Chile
- 60mm Hyper Velocity Multipurpose System gun (HVMS) developed by Israel
- Re-engined with GE diesel power plant (note exhaust on right-hand side of engine deck)
- Probably the last fighting Sherman in active service



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About the author

Although Jim Wechsler readily admits he loves Shermans, he models all types of armor and vehicles from all eras. Jim started modeling with his dad as a youngster. He got serious about modeling in his teens and worked to improve his skills throughout college, only taking a break when he got married and began his career. He returned to the hobby by way of painting metal miniatures for the Battletech board game. That look of battlefield realism led Jim back to scale armor modeling around the turn of the century. His first kit was a Tamiya T-34, built in 2001.

He took that same kit to his first model contest and show, Tamiyacon 2003, where his T-34 won a first place. From there, it was on to the International Plastic Modeler's Society (IPMS) contest in Las Vegas a few months later. Jim credits local club activities and the help of modeling friends for a dramatic improvement in his modeling skills, and he says he was thrilled to win a first place at the 2004 IPMS Nationals in Phoenix with an M36 Jackson.

In 2005, his scene of a Centaur driving over a Churchill Ark bridging vehicle earned one of the four top awards at the annual Tamiyacon event. With that award came a week-long trip to Japan to attend



Tamiya's Shizouka show and to meet the head of Tamiya. Later that year at the IPMS national event in Atlanta, Jim saw an impressive "group build" of Panther tanks. When it was announced that the 2007 IPMS Nationals was going to be in Anaheim, just a few minutes from his home, he decided to do something special. And that's how this collection of Sherman tanks with figures and in historical settings was born. His goal was to model the evolution

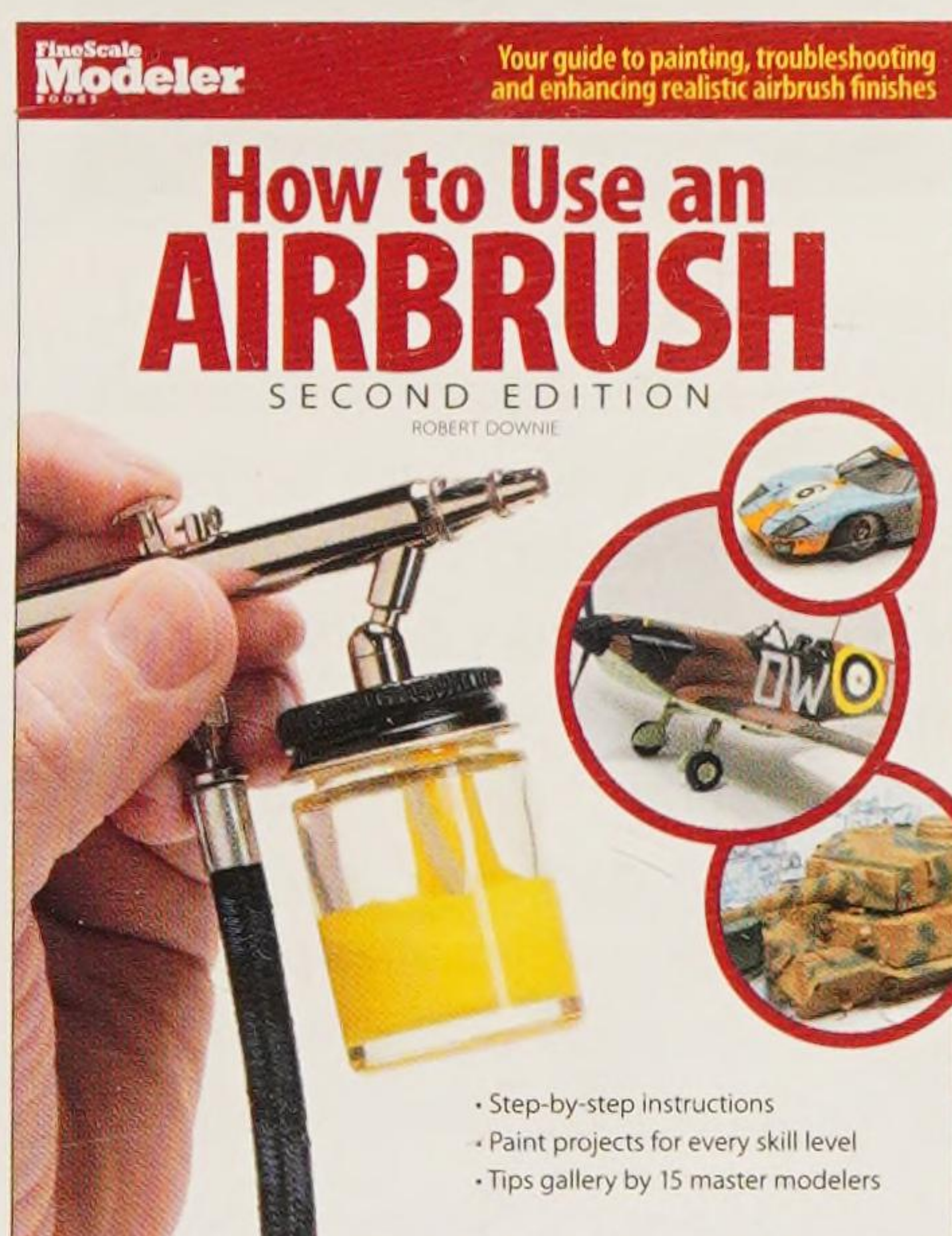
of the Sherman, resulting in a 43-piece collection, which won the Best of Show award.

Jim's models have since been honored with "Best Commonwealth Vehicle" and "Best Small Army" category awards at the 2008 IPMS show.

Jim lives in Orange County, California, with his wife and two teenage daughters. An aerospace engineer by background, he spent most of his career working for Northrop, McDonnell Douglas, and Boeing.

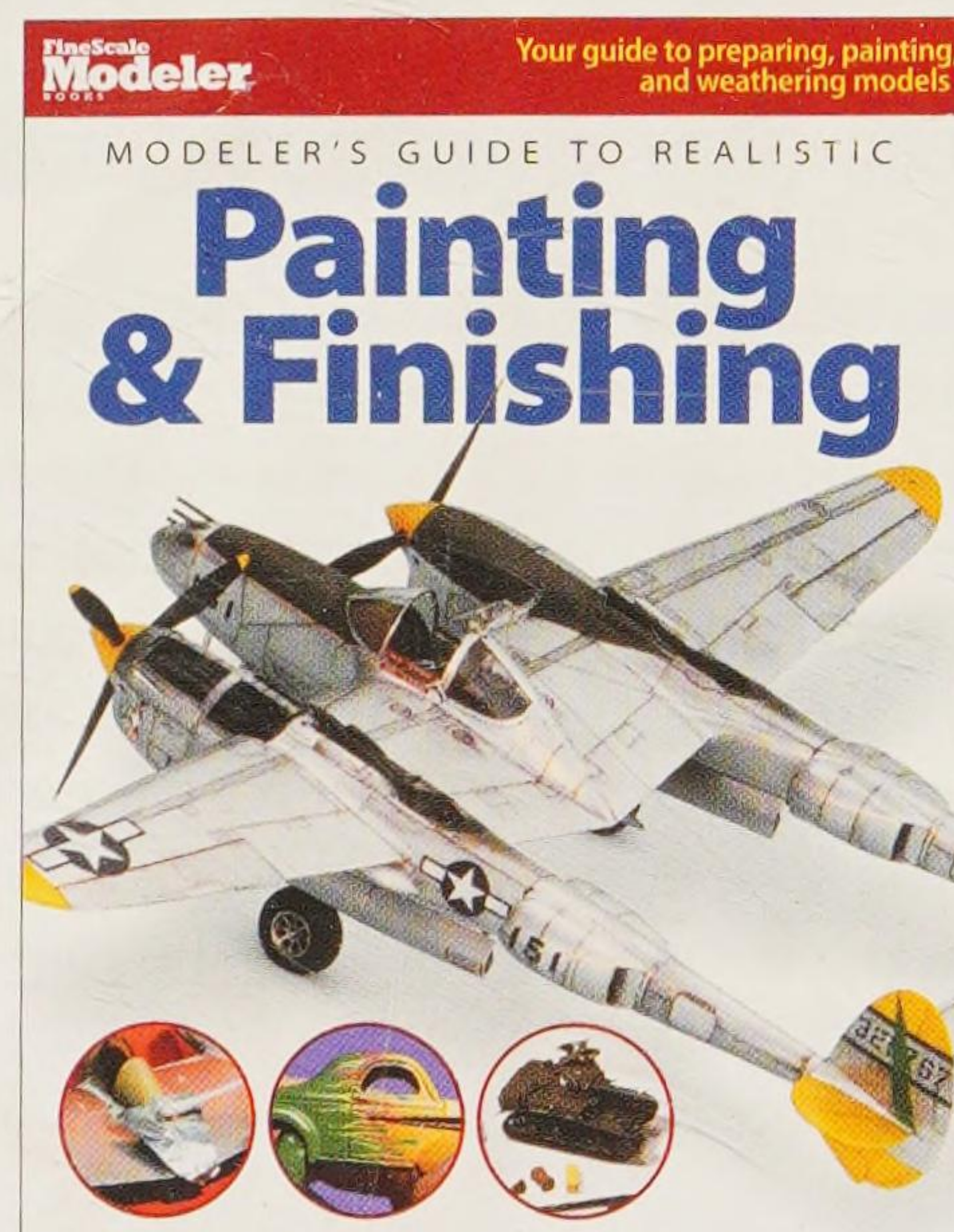
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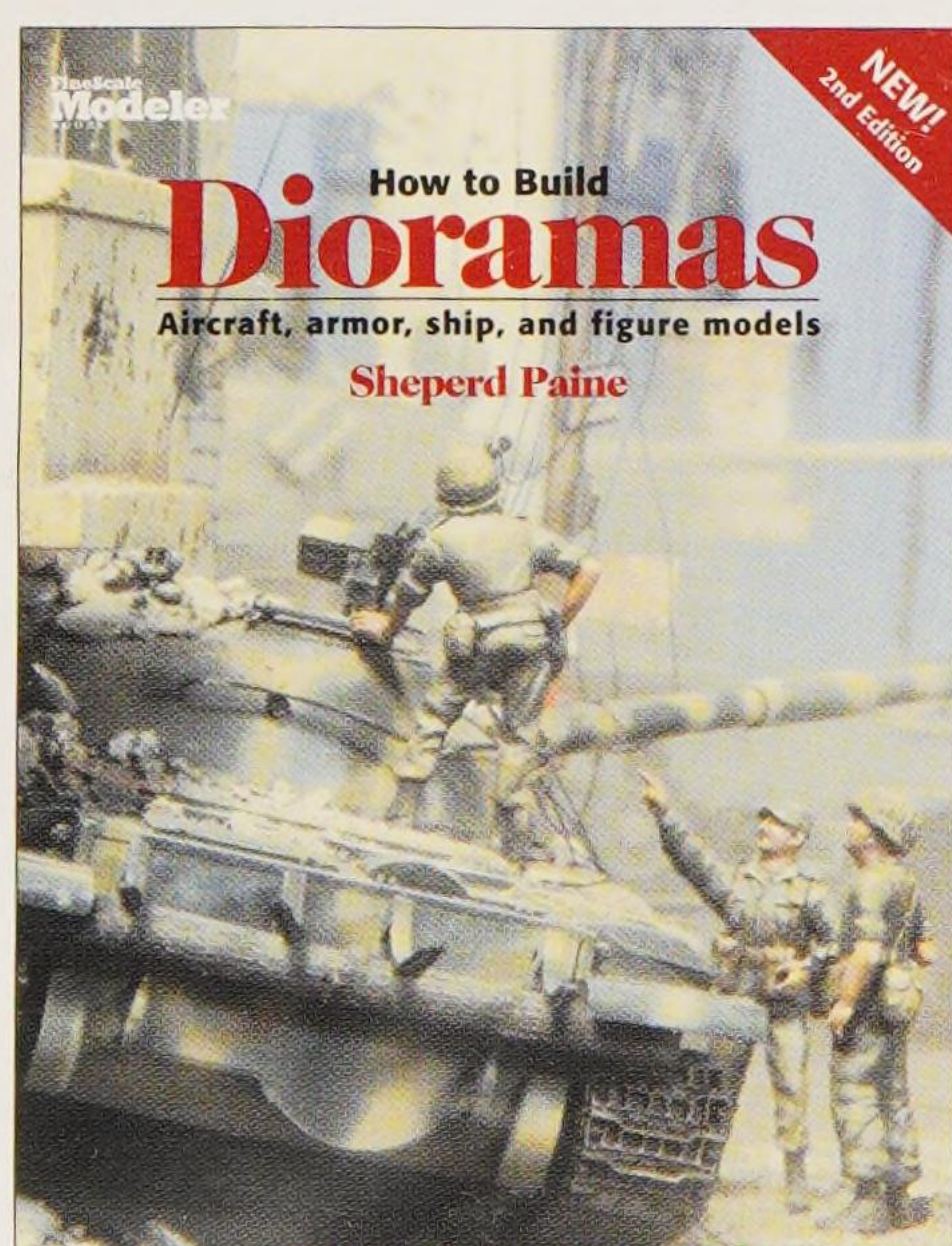
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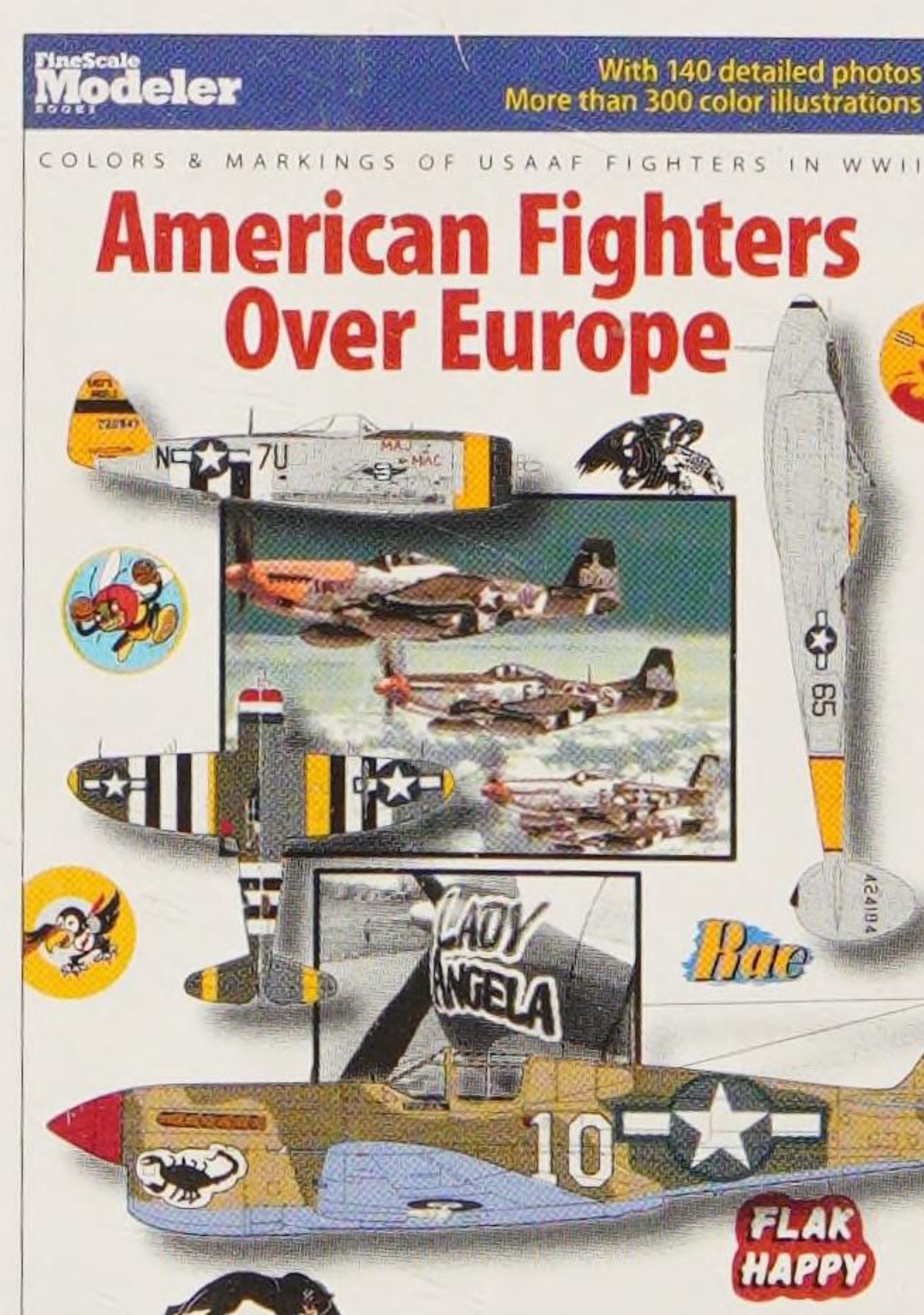
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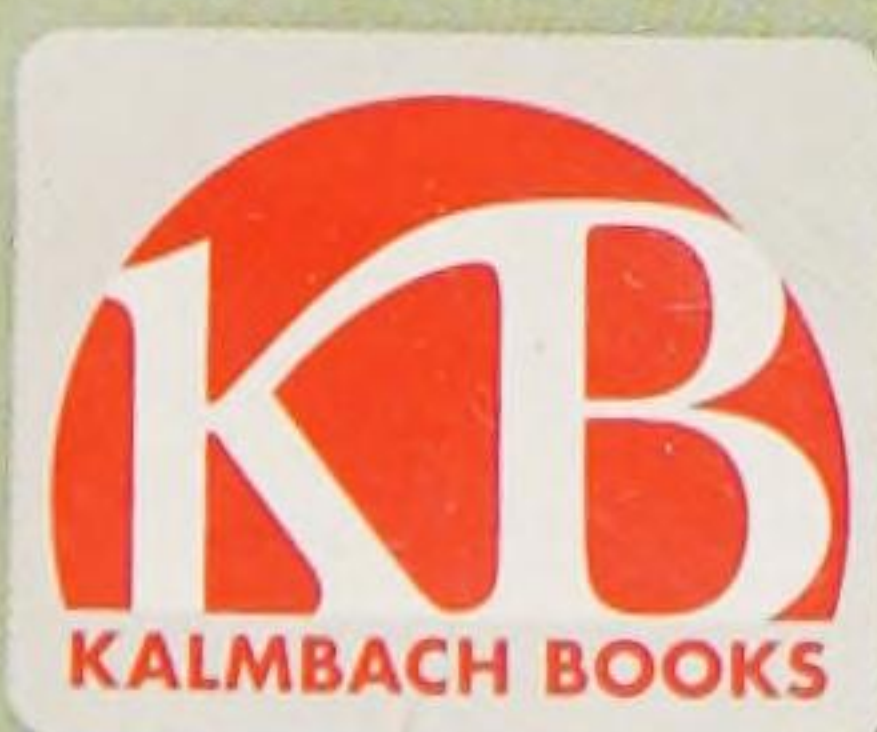
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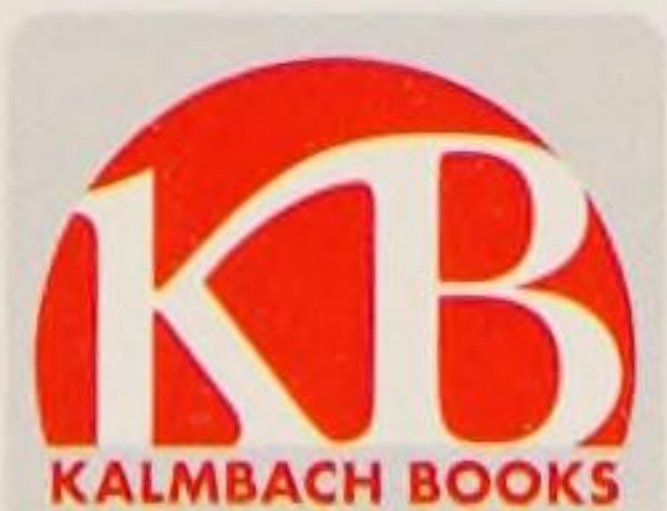
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M4 Sherman
with wading gear



M4A3(76)W
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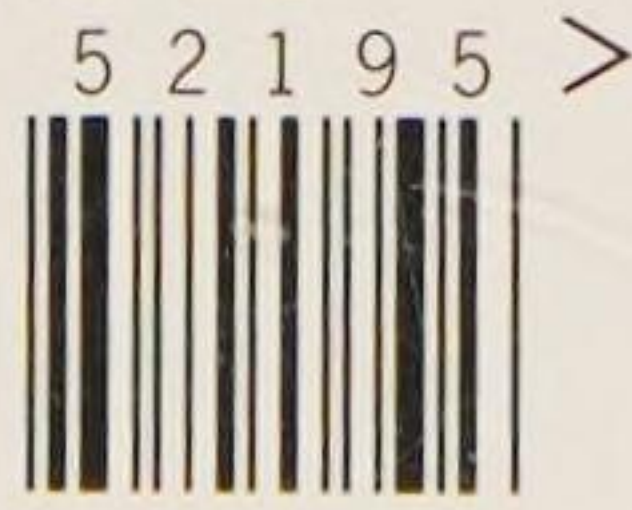
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